



**US Army Corps
of Engineers
Philadelphia District**

Construction and Repair of Taxiways Army National Guard Area

**McGuire Air Force Base
Wrightstown, New Jersey**

**Construction Solicitation
and Specifications**

07 June 2001

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CAUTION TO BIDDERS

All information required by the terms of the Solicitation must be furnished. MISTAKES OR OMISSIONS CAN BE COSTLY. Important items for you to check are included in but not limited to those listed below. This checklist is furnished only to assist you in submitting a proper bid. Check as you read.

☐ Are you registered in the Central Contractor Database? See DFARS Clause 252.204-7004 "REQUIRED CENTRAL CONTRACTOR REGISTRATION" in Section 00700 of this solicitation?

☐ Have you acknowledged all amendments? Have you submitted your bid on the latest amended bid schedule?

☐ Have you completed the "Representations and Certifications" {Section 00600} portion of the Solicitation? Is your Contractor Establishment Code listed on the Standard Form 1442?

☐ Is your bid properly signed by an officer of your company?

☐ If a bid guarantee is required, is it included with your bid {A late bid guarantee is treated the same as a late bid.} and is it in the proper amount? {Usually 20 percent of the total bid price, including any options or additives.} If your bid guarantee is in the form of a bid bond, is the bond properly signed by both the bidder and surety and are all required seals affixed? A bid guarantee is required when your bid exceeds \$100,000.00.

☐ Is the name in which you submitted the bid the same on your bid as on the bid bond?

☐ If required, have you entered a unit price for each bid item? {The solicitation will specifically state when this is necessary.}

☐ The Government may reject a bid as nonresponsive if it is materially and mathematically unbalanced as to price for any bid item or combination of items. A bid is unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

☐ Are decimals in unit prices in the proper places? Are your figures legible?

☐ Are the extensions of your unit prices, and your total bid price correct?

☐ Are all erasures or corrections initialed by the person signing the bid?

☐ Have you restricted your bid by altering the provisions of the solicitation?

☐ If you are a large business and your bid is greater than \$1,000,000.00 have you included your Sub-Contracting Plan in your bid package? {NOTE: AN AWARD WILL NOT BE MADE WITHOUT AN APPROVED SUB-CONTRACTING PLAN. IN ORDER TO BE APPROVED YOUR PLAN MUST DESIGNATE 5% OF THE TOTAL SUB-CONTRACTING DOLLARS TO SMALL DISADVANTAGED BUSINESSES}.

☐ Is the envelope containing your bid properly identified that it is a sealed bid and does it contain the correct solicitation number and bid opening time?

☐ Will your bid arrive on time? See paragraph entitled "Late Submissions, Modifications, and Withdrawals of Bids" in the Instructions to Bidders {Section 00100} of the solicitation.

July 02, 1998

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INVITATION NO. DACA61-01-B-0001

PHILADELPHIA DISTRICT
CORPS OF ENGINEERS

INVITATION FOR BIDS
FOR

CONSTRUCTION AND REPAIR OF TAXIWAYS
ARMY NATIONAL GUARD AREA

MCGUIRE AIR FORCE BASE
WRIGHTSTOWN, NEW JERSEY

I. NOTE THE AFFIRMATIVE ACTION REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.

II. BIDDERS ARE REQUIRED TO COMPLETE THE REPRESENTATION AND CERTIFICATIONS PORTION OF SECTION 00600 OF THIS SOLICITATION AND SUBMIT THIS WITH THEIR BID.

III. SITE VISIT: PROSPECTIVE BIDDERS ARE INVITED TO VISIT THE SITE OF THE WORK TO ACQUAINT THEMSELVES WITH THE SITE CONDITIONS AND ANY PROBLEMS INCIDENT TO THE PROSECUTION OF THE WORK. THE SITE VISIT WILL BE HELD ON 21 JUNE 2001. THE SITE VISIT WILL BEGIN AT 10:00 AM AT THE U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT, MCGUIRE RESIDENT OFFICE, 2404 TUSKEGEE AIRMEN AVENUE, MCGUIRE AIR FORCE BASE, NEW JERSEY. ALL THOSE PLANNING TO ATTEND SHOULD CONTACT MR. PAUL JALOWSKI AT (609) 754-8137.

07 June 2001

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| | | | | |
|---|---------------------|---|----------------|---------------|
| SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i> | 1. SOLICITATION NO. | 2. TYPE OF SOLICITATION | 3. DATE ISSUED | PAGE OF PAGES |
| | DACA61-01-B-0001 | <input checked="" type="checkbox"/> SEALED BID (IFB) <input type="checkbox"/> NEGOTIATED (RFP) | 07 June 2001 | |

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

| | | |
|---|-------------------------------------|---|
| 4. CONTRACT NO. | 5. REQUISITION/PURCHASE REQUEST NO. | 6. PROJECT NO. DACA61-01-B-0001 |
| 7. ISSUED BY US Army Corps of Engineers, Philadelphia Wanamaker Building 100 Penn Square East Philadelphia, Pennsylvania 19107-3390 | CODE DACA61 | 8. ADDRESS OFFER TO See Item 7 |
| 9. FOR INFORMATION CALL:  | A. NAME Jennifer McGivern | B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (215) 656-6773 |

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

Project Title: Construct/Repair Taxiways, Air National Guard (ANG) Aircraft Parking Area, McGuire AFB, NJ

Issue Date: 07 June 2001

Bid Opening Date: 10 July 2001, 11:00 am

Site Inspection: Site Inspection will be conducted on 21 June 2001 beginning at 10:00 a.m. from the New York District McGuire Resident Office, 2404 Tuskegee Airman Avenue, McGuire AFB, NJ. All those planning to attend should contact Mr. Paul Jalowski at (609) 754-8137.

THIS ACQUISITION IS UNRESTRICTED.

| | |
|--|------------------------------|
| 11. The Contractor shall begin performance within <u>5</u> calendar days and complete it within <u>270</u> calendar days after receiving <input type="checkbox"/> award, <input checked="" type="checkbox"/> notice to proceed. This performance period is <input checked="" type="checkbox"/> mandatory, <input type="checkbox"/> negotiable. (See _____.) | |
| 12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | 12B. CALENDAR DAYS 10 |

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 1 copies to perform the work required are due at the place specified in Item 8 by 1100 (hour) local time 10 July 2001 (date). If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

15. TELEPHONE NO. (Include area code)

16. REMITTANCE ADDRESS (Include only if different than Item 14)

CODE

FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.

AMOUNTS 

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

| AMENDMENT NO. | | | | | | | | | | |
|---------------|--|--|--|--|--|--|--|--|--|--|
| DATE | | | | | | | | | | |

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER
(Type or print)

20B. SIGNATURE

20C. OFFER DATE

AWARD (To be completed by Government)

21. ITEMS ACCEPTED:

22. AMOUNT

23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN
(4 Copies unless otherwise specified)

ITEM

25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO

☐ 10 U.S.C 2304(c) () ☐ 41 U.S.C 253(c) ()

26. ADMINISTERED BY

CODE

27. PAYMENT WILL BE MADE BY

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.

☐ 29. AWARD (Contractor is not required to sign this document.) Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)

31A. NAME OF CONTRACTING OFFICER (Type or print)

30B. SIGNATURE

30C. DATE

31B. UNITED STATES OF AMERICA

BY

31C. AWARD DATE

BID SCHEDULE
(To be attached to SF 1442)

| Bid Item No. | Description | Estimated Qty | Unit | Unit Price | Estimated Amount |
|---|---|------------------|------|------------|---------------------|
| <u>BASE BID:</u> | | | | | |
| 0001 | Taxiway Y Construction | 1 | JOB | LS | \$ |
| 0002 | Taxiway H Pavement Replacement | 1 | JOB | LS | \$ |
| 0003 | Taxiway L Pavement Replacement | 1 | JOB | LS | \$ |
| 0004 | Taxiway L Joint Installation | 1200 | LF | \$ | \$ |
| 0005 | Removal and Replacement of Unstable Material | 200 | CY | \$ | \$ |
| <u>TOTAL ESTIMATED BASE BID AMOUNT:</u> | | | | | \$ |
| <u>OPTION:</u> | | | | | |
| 0006 | Taxiway Y Edge and Exit Lights | 1 | JOB | LS | \$ |
| <u>TOTAL ESTIMATED OPTION AMOUNT:</u> | | | | | \$ |
| <u>TOTAL ESTIMATED BASE BID AND OPTION AMOUNTS:</u> | | | | | \$ |

NOTE: Bidders must bid on all items.

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SECTION 00100 Bidding Schedule/Instructions to Bidders

CLAUSES INCORPORATED BY FULL TEXT

52.204-6 DATA UNIVERSAL NUMBERING SYSTEM (DUNS) NUMBER (JUN 99)

(a) Contractor identification is essential for complying with statutory contract reporting requirements. Therefore, the offeror is requested to enter, in the block with its name and address on the Standard Form 33 or similar document, the annotation "DUNS" followed by the DUNS number which identifies the offeror's name and address exactly as stated in the offer.

(b) If the offeror does not have a DUNS number, it should contact Dun and Bradstreet directly to obtain one. A DUNS number will be provided immediately by telephone at no charge to the offeror. For information on obtaining a DUNS number, the offeror, if located within the United States, should call Dun and Bradstreet at 1-800-333-0505. The offeror should be prepared to provide the following information:

- (1) Company name.
- (2) Company address.
- (3) Company telephone number.
- (4) Line of business.
- (5) Chief executive officer/key manager.
- (6) Date the company was started.
- (7) Number of people employed by the company.
- (8) Company affiliation.

(c) Offerors located outside the United States may obtain the location and phone number of the local Dun and Bradstreet Information Services office from the Internet Home Page at <http://www.customerservice@dnb.com/>. If an offeror is unable to locate a local service center, it may send an e-mail to Dun and Bradstreet at globalinfo@dnb.com.

(End of provision)

52.211-2 AVAILABILITY OF SPECIFICATIONS LISTED IN THE DOD INDEX OF SPECIFICATIONS AND STANDARDS (DODISS) AND DESCRIPTIONS LISTED IN THE ACQUISITION MANAGEMENT SYSTEMS AND DATA REQUIREMENTS CONTROL LIST, DOD 5010.12-L (DEC 1999)

Copies of specifications, standards, and data item descriptions cited in this solicitation may be obtained--

- (a) From the ASSIST database via the Internet at <http://assist.daps.mil>; or

(b) By submitting a request to the--Department of Defense Single Stock Point (DoDSSP), Building 4, Section D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Telephone (215) 697-2667/2179, Facsimile (215) 697-1462.

(End of provision)

52.214-1 SOLICITATION DEFINITIONS--SEALED BIDDING (JUL 1987)

"Government" means United States Government.

"Offer" means "bid" in sealed bidding.

"Solicitation" means an invitation for bids in sealed bidding.

(End of provision)

52.214-3 AMENDMENTS TO INVITATIONS FOR BIDS (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting a bid, (3) by letter or telegram, or (4) by facsimile, if facsimile bids are authorized in the solicitation. The Government must receive the acknowledgment by the time and at the place specified for receipt of bids.

(End of provision)

52.214-4 FALSE STATEMENTS IN BIDS (APR 1984)

Bidders must provide full, accurate, and complete information as required by this solicitation and its attachments. The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

(End of provision)

52.214-5 SUBMISSION OF BIDS (MAR 1997)

(a) Bids and bid modifications shall be submitted in sealed envelopes or packages (unless submitted by electronic means) (1) addressed to the office specified in the solicitation, and (2) showing the time and date specified for receipt, the solicitation number, and the name and address of the bidder.

(b) Bidders using commercial carrier services shall ensure that the bid is addressed and marked on the outermost envelope or wrapper as prescribed in subparagraphs (a)(1) and (2) of this provision when delivered to the office specified in the solicitation.

(c) Telegraphic bids will not be considered unless authorized by the solicitation; however, bids may be modified or withdrawn by written or telegraphic notice.

(d) Facsimile bids, modifications, or withdrawals, will not be considered unless authorized by the solicitation.

(e) Bids submitted by electronic commerce shall be considered only if the electronic commerce method was specifically stipulated or permitted by the solicitation.

52.214-6 EXPLANATION TO PROSPECTIVE BIDDERS (APR 1984)

Any prospective bidder desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon enough to allow a reply to reach all prospective bidders before the submission of their bids. Oral explanations or instructions given before the award of a contract will not be binding. Any information given a prospective bidder concerning a solicitation will be furnished promptly to all other prospective bidders as an amendment to the solicitation, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

(End of provision)

52.214-7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS (NOV 1999)

(a) Bidders are responsible for submitting bids, and any modifications or withdrawals, so as to reach the Government office designated in the invitation for bids (IFB) by the time specified in the IFB. If no time is specified in the IFB, the time for receipt is 4:30 p.m., local time, for the designated Government office on the date that bids are due.

(b)(1) Any bid, modification, or withdrawal received at the Government office designated in the IFB after the exact time specified for receipt of bids is "late" and will not be considered unless it is received before award is made, the Contracting Officer determines that accepting the late bid would not unduly delay the acquisition; and--

(i) If it was transmitted through an electronic commerce method authorized by the IFB, it was received at the initial point of entry to the Government infrastructure not later than 5:00 p.m. one working day prior to the date specified for receipt of bids; or

(ii) There is acceptable evidence to establish that it was received at the Government installation designated for receipt of bids and was under the Government's control prior to the time set for receipt of bids.

(2) However, a late modification of an otherwise successful bid that makes its terms more favorable to the Government, will be considered at any time it is received and may be accepted.

(c) Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of that installation on the bid wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel.

(d) If an emergency or unanticipated event interrupts normal Government processes so that bids cannot be received at the Government office designated for receipt of bids by the exact time specified in the IFB and urgent Government requirements preclude amendment of the IFB, the time specified for receipt of bids will be deemed to be extended to the same time of day specified in the solicitation on the first work day on which normal Government processes resume.

(e) Bids may be withdrawn by written notice received at any time before the exact time set for receipt of bids. If the IFB authorizes facsimile bids, bids may be withdrawn via facsimile received at any time before the exact time set for receipt of bids, subject to the conditions specified in the provision at 52.214-31, Facsimile Bids. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for receipt of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

(End of provision)

52.214-18 PREPARATION OF BIDS--CONSTRUCTION (APR 1984)

(a) Bids must be (1) submitted on the forms furnished by the Government or on copies of those forms, and (2) manually signed. The person signing a bid must initial each erasure or change appearing on any bid form.

(b) The bid form may require bidders to submit bid prices for one or more items on various bases, including--

(1) Lump sum bidding;

(2) Alternate prices;

(3) Units of construction; or

(4) Any combination of subparagraphs (1) through (3) above.

(c) If the solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "no bid" in the space provided for any item on which no price is submitted.

(d) Alternate bids will not be considered unless this solicitation authorizes their submission.

52.214-19 CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION (AUG 1996)

(a) The Government will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the Government, considering only price and the price-related factors specified elsewhere in the solicitation.

(b) The Government may reject any or all bids, and waive informalities or minor irregularities in bids received.

(c) The Government may accept any item or combination of items, unless doing so is precluded by a restrictive limitation in the solicitation or the bid.

(d) The Government may reject a bid as nonresponsive if the prices bid are materially unbalanced between line items or subline items. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the bid will result in the lowest overall cost to the Government even though it may be the low evaluated bid, or if it is so unbalanced as to be tantamount to allowing an advance payment.

52.217-4 EVALUATION OF OPTIONS EXERCISED AT TIME OF CONTRACT AWARD (JUN 1988)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate the total price for the basic requirement together with any option(s) exercised at the time of award.

(End of provision)

52.225-10 NOTICE OF BUY AMERICAN ACT/BALANCE OF PAYMENTS PROGRAM REQUIREMENT--CONSTRUCTION MATERIALS (FEB 2000)

(a) Definitions. Construction material, domestic construction material, and foreign construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act--Balance of Payments Program--Construction Materials" (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) Requests for determinations of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act or Balance of Payments Program before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act or Balance of Payments Program, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.228-1 BID GUARANTEE (SEP 1996)

(a) Failure to furnish a bid guarantee in the proper form and amount, by the time set for opening of bids, may be cause for rejection of the bid.

(b) The bidder shall furnish a bid guarantee in the form of a firm commitment, e.g., bid bond supported by good and sufficient surety or sureties acceptable to the Government, postal money order, certified check, cashier's check, irrevocable letter of credit, or, under Treasury Department regulations, certain bonds or notes of the United States. The Contracting Officer will return bid guarantees, other than bid bonds, (1) to unsuccessful bidders as soon as practicable after the opening of bids, and (2) to the successful bidder upon execution of contractual documents and bonds (including any necessary coinsurance or reinsurance

agreements), as required by the bid as accepted.

(c) The amount of the bid guarantee shall be 20% percent of the bid price or \$3,000,000.00, whichever is less.

(d) If the successful bidder, upon acceptance of its bid by the Government within the period specified for acceptance, fails to execute all contractual documents or furnish executed bond(s) within 10 days after receipt of the forms by the bidder, the Contracting Officer may terminate the contract for default.

(e) In the event the contract is terminated for default, the bidder is liable for any cost of acquiring the work that exceeds the amount of its bid, and the bid guarantee is available to offset the difference.

52.233-2 SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Mr. Robert Sharamatew, Chief, Contracting Division, Wanamaker Building, 100 Penn Square East, Rm 643, Philadelphia, Pennsylvania 19107-3390.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

52.236-27 SITE VISIT (CONSTRUCTION) (FEB 1995) – ALTERNATE I (FEB 1995)

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) An organized site visit has been scheduled for--
21 June 2001 beginning at 10:00 a.m.

(c) Participants will meet at--
the New York District McGuire Resident Office, 2404 Tuskegee Airman Avenue, McGuire AFB, NJ. All those planning to attend should contact Mr. Paul Jalowski at (609) 754-8137.

SECTION 00600 Representations & Certifications

CLAUSES INCORPORATED BY FULL TEXT

52.203-2 CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (APR 1985)

(a) The offeror certifies that --

(1) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to (i) those prices, (ii) the intention to submit an offer, or (iii) the methods of factors used to calculate the prices offered:

(2) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory --

(1) Is the person in the offeror's organization responsible for determining the prices offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contradictory to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as an agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above _____ (insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization);

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the offeror deletes or modifies subparagraph (a)(2) above, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

(End of clause)

52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this Certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989,--

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or

employee of Congress, or an employee of a member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(End of provision)

52.204-5 WOMEN-OWNED BUSINESS (OTHER THAN SMALL BUSINESS) (MAY 1999)

(a) Definition. Women-owned business concern, as used in this provision, means a concern that is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of its stock is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

(b) Representation. [Complete only if the offeror is a women-owned business concern and has not represented itself as a small business concern in paragraph (b)(1) of FAR 52.219-1, Small Business Program Representations, of this solicitation.] The offeror represents that it () is a women-owned business concern.

(End of provision)

52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (APR 2001)

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that--

(i) The Offeror and/or any of its Principals --

(A) Are () are not () presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) Have () have not (), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(ii) The Offeror has () has not (), within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(D) Have () have not (), within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(E) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

(End of provision)

52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 2000) ALTERNATE I (OCT 2000) & ALTERNATE II (OCT 2000)

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is 23411 (insert NAICS code).

(2) The small business size standard is \$27.5 million (insert size standard).

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b) Representations. (1) The offeror represents as part of its offer that it () is, () is not a small business concern.

(2) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents, for general statistical purposes, that it () is, () is not a small disadvantaged business concern as defined in 13 CFR 124.1002.

(3) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.

(4) (Complete only if the offeror represented itself as a small business concern in paragraph (b)(1) of this provision.) The offeror represents as part of its offer that it () is, () is not a veteran-owned small business concern.

(5) (Complete only if the offeror represented itself as a veteran-owned small business concern in paragraph (b)(4) of this provision.) The offeror represents as part of its offer that it () is, () is not a service-disabled veteran-owned small business concern.

(6) (Complete only if offeror represented itself as small business concern in paragraph (b)(1) of this provision). The offeror represents, as part of its offer, that--

(i) It () is, () is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR Part 126; and

(ii) It () is, () is not a joint venture that complies with the requirements of 13 CFR Part 126, and the representation in paragraph (b)(6)(i) of this provision is accurate for the HUBZone small business concern or concerns that are participating in the joint venture. (The offeror shall enter the name or names of the HUBZone small business concern or concerns that are participating in the joint venture: _____.) Each HUBZone small business concern participating in the joint venture shall submit a separate signed copy of the HUBZone representation.

(7) (Complete if offeror represented itself as disadvantaged in paragraph (b)(2) of this provision.) The offeror shall check the category in which its ownership falls:

() Black American.

() Hispanic American.

() Native American (American Indians, Eskimos, Aleuts, or Native Hawaiians).

() Asian-Pacific American (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru).

() Subcontinent Asian (Asian-Indian) American (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal).

(c) Definitions. As used in this provision--

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

"Small business concern," means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

"Women-owned small business concern," means a small business concern --

(1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Notice.

(1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.

(2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small, HUBZone small, small disadvantaged, or women-owned small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to section 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

(i) Be punished by imposition of fine, imprisonment, or both;

(ii) Be subject to administrative remedies, including suspension and debarment; and

(iii) Be ineligible for participation in programs conducted under the authority of the Act.

(End of provision)

52.219-2 EQUAL LOW BIDS. (OCT 1995)

(a) This provision applies to small business concerns only.

(b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.

—

—

(c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

52.222-22 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FEB 1999)

The offeror represents that --

(a) ☐ It has, ☐ has not participated in a previous contract or subcontract subject to the Equal Opportunity clause of this solicitation;

(b) ☐ It has, ☐ has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

(End of provision)

52.223-13 CERTIFICATION OF TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Submission of this certification is a prerequisite for making or entering into this contract imposed by Executive Order 12969, August 8, 1995.

(b) By signing this offer, the offeror certifies that--

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: (Check each block that is applicable.)

☐ (i) The facility does not manufacture, process or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);

[] (ii) The facility does not have 10 or more full-time employees as specified in section 313.(b)(1)(A) of EPCRA 42 U.S.C. 11023(b)(1)(A);

[] (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

[] (iv) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or

[] (v) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

252.209-7001 DISCLOSURE OF OWNERSHIP OR CONTROL BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) "Definitions."

As used in this provision --

(a) "Government of a terrorist country" includes the state and the government of a terrorist country, as well as any political subdivision, agency, or instrumentality thereof.

(2) "Terrorist country" means a country determined by the Secretary of State, under section 6(j)(1)(A) of the Export Administration Act of 1979 (50 U.S.C. App. 2405(j)(i)(A)), to be a country the government of which has repeatedly provided support for such acts of international terrorism. As of the date of this provision, terrorist countries include: Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria.

(3) "Significant interest" means --

(i) Ownership of or beneficial interest in 5 percent or more of the firm's or subsidiary's securities. Beneficial interest includes holding 5 percent or more of any class of the firm's securities in "nominee shares," "street names," or some other method of holding securities that does not disclose the beneficial owner;

(ii) Holding a management position in the firm, such as a director or officer;

(iii) Ability to control or influence the election, appointment, or tenure of directors or officers in the firm;

(iv) Ownership of 10 percent or more of the assets of a firm such as equipment, buildings, real estate, or other tangible assets of the firm; or

(v) Holding 50 percent or more of the indebtedness of a firm.

(b) "Prohibition on award."

In accordance with 10 U.S.C. 2327, no contract may be awarded to a firm or a subsidiary of a firm if the government of a terrorist country has a significant interest in the firm or subsidiary or, in the case of a subsidiary, the firm that owns the subsidiary, unless a waiver is granted by the Secretary of Defense.

(c) "Disclosure."

If the government of a terrorist country has a significant interest in the Offeror or a subsidiary of the Offeror, the Offeror shall disclose such interest in an attachment to its offer. If the Offeror is a

subsidiary, it shall also disclose any significant interest the government of a terrorist country has in any firm that owns or controls the subsidiary. The disclosure shall include --

(1) Identification of each government holding a significant interest; and

(2) A description of the significant interest held by each government.

(End of provision)

252.247-7022 REPRESENTATION OF EXTENT OF TRANSPORTATION BY SEA (AUG 1992)

(a) The Offeror shall indicate by checking the appropriate blank in paragraph (b) of this provision whether transportation of supplies by sea is anticipated under the resultant contract. The term supplies is defined in the Transportation of Supplies by Sea clause of this solicitation.

(b) Representation. The Offeror represents that it:

____ (1) Does anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

____ (2) Does not anticipate that supplies will be transported by sea in the performance of any contract or subcontract resulting from this solicitation.

(c) Any contract resulting from this solicitation will include the Transportation of Supplies by Sea clause. If the Offeror represents that it will not use ocean transportation, the resulting contract will also include the Defense FAR Supplement clause at 252.247-7024, Notification of Transportation of Supplies by Sea.

(End of provision)

SMALL, VETERAN-OWNED SMALL, HUBZONE SMALL, SMALL DISADVANTAGED
AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN

DATE: _____

CONTRACTOR: _____

ADDRESS: _____

SOLICITATION OR CONTRACT NUMBER: _____

ITEM/SERVICE: _____

The following, together with any attachments, is hereby submitted as a Subcontracting Plan to satisfy the applicable requirements of Public Law 95-507 as implemented by OFPP Policy Letter 80-2.

1. (a) The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract cited above or to the contract awarded under the solicitation cited.

(i) Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns.

(ii) Veteran-Owned Small Business Concerns: _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are veteran-owned small business concerns. Service-disabled veteran-owned small business concerns meet the definition of veteran-owned small business concerns, and offerors may include them within the subcontracting plan goal for veteran-owned small business concerns. A separate goal for service-disabled veteran-owned small business concerns is not required.

(iii) HUBZone Small Business Concerns: _____ % of total planned subcontracting dollars under this contract will go to subcontractors who are small business concerns located in a historically underutilized business zone which is an area located within one or more qualified census tracts, qualified nonmetropolitan counties, or lands within the external boundaries of an Indian reservation and appear on the List of Qualified HUBZone Small Business Concerns maintained by the SBA. (<http://www.sba.gov/hubzone/>).

(iv) Small Disadvantaged Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are small concerns owned and controlled by socially and economically disadvantaged individuals. This percentage is included in the percentage shown under 1.(a)(i) above, as a subset.

(v) Women-Owned Small Business Concerns: _____% of total planned subcontracting dollars under this contract will go to subcontractors who are women-owned small business concerns. This percentage is included in the percentage shown under 1.(a)(i) above, as a subset.

- (b) The following dollar values correspond to the percentage goals shown in (a) above.

(i) Total dollars planned to be subcontracted to small business concerns:
\$ _____.

(ii) Total dollars planned to be subcontracted to veteran-owned small business concerns:
\$_____.

(iii) Total dollars planned to be subcontracted to HUBZone small business concerns:
\$_____.

(iv) Total dollars planned to be subcontracted to small disadvantaged business concerns:
\$_____. This dollar amount is included in the amount shown under 1.(b)(i) above, as a subset.

(v) Total dollars planned to be subcontracted to women-owned small business concerns:
\$_____. This dollar amount is included in the amount shown under 1.(b)(i) above, as a subset.

(c) The total estimated dollar value of all planned subcontracting (to all types of business concerns) under this contract is \$_____.

(d) The following principal products and/or services will be subcontracted under this contract, and the distribution among small, veteran-owned small, HUBZone small business, small disadvantaged, and women-owned small business concerns is as follows:

(Products/services planned to be subcontracted to small business concerns are identified by *, veteran-owned small business concerns by **, HUBZone small business concerns by ***, small disadvantaged business concerns by **** and women-owned small business concerns by *****)

(Attachment may be used if additional space is required)

(e) The following method was used in developing subcontract goals (i.e., statement explaining how the product and service areas to be subcontracted were established, how the areas to be subcontracted to small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns were determined, and how small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns capabilities were determined, to include identification of source lists utilized in making those determination).

(f) Indirect and over head costs [_____] have [_____] have not been included in the goals specified in 1(a) and 1(b).

(g) If “have” is checked, explain the method used in determining the proportionate share of indirect and overhead cost to be allocated as subcontracts to small business concerns, veteran-owned small, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

2. The following individual will administer the subcontracting program:

Name: _____

Address & Telephone: _____

Telephone: _____

This individual's specific duties, as they relate to the firm's subcontracting program are as follows:

General overall responsibility for this company's Small Business Program, the development, preparation and execution of individual subcontracting plans and for monitoring performance relative to contractual subcontracting requirements contained in this plan, including but not limited to:

(a) Developing and maintaining bidders lists of small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business concerns from all possible sources.

(b) Ensuring that procurement packages are structured to permit small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business concerns to participate to the maximum extent possible.

(c) Assuring inclusion of small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business concerns in all solicitations for products or services which they are capable of providing.

(d) Reviewing solicitations to remove statements, clauses, etc., which may tend to restrict or prohibit small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business participation.

(e) Ensuring periodic rotation of potential subcontractors on bidders lists.

(f) Ensuring that the bid proposal review board documents its reasons for rejecting low bids submitted by small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business concerns.

(g) Ensuring the establishment and maintenance of records of solicitations and subcontract award activity.

(h) Attending or arranging for attendance of company counselors at Business Opportunity Workshops, Minority Business Enterprise Seminars, Trade Fairs, etc.

(i) Conducting or arranging for conduct of motivational training for purchasing personnel pursuant to the intent of P.O. 95-507.

(j) Monitoring attainment of proposed goals.

(k) Preparing and submitting periodic subcontracting reports required.

(l) Coordinating contractor's activities during the conduct of compliance reviews by Federal Agencies.

(m) Coordinating the conduct of contractor's activities involving its small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business subcontracting program.

(n) Additions to (or deletions from) the duties specified above are as follows:

3. The following efforts will be taken to assure that small, veteran-owned small, HUBZone, small, small disadvantaged, and women-owned business concerns will have an equitable opportunity to compete for subcontracts:

(a) Outreach efforts will be made as follows:

(i) Contacts with minority and small business trade associations

(ii) Contacts with business development organizations

(iii) Attendance at small and minority business procurement conferences

(iv) Sources will be requested from SBA's PASS system.

(b) The following internal efforts will be made to guide and encourage buyers:

(i) Workshops, seminars and training programs will be conducted

(ii) Activities will be monitored to evaluate compliance with this subcontracting plan.

(c) Small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business concern source lists, guides and other data identifying small, veteran-owned small,

HUBZone small, small disadvantaged, and women-owned business concerns will be maintained and utilized by buyers in soliciting subcontracts.

(d) Additions to (or deletions from) the above listed efforts are as follows:

4. The bidder (contractor) agrees that the clause entitled Utilization of Small, veteran-owned small, HUBZone Small, Small Disadvantaged, and Women-Owned Small Business Concerns will be included in all subcontracts which offer further subcontracting opportunities, and all subcontractors except small business concerns who receive subcontracts in excess of \$500,000 will be required to adopt and comply with a subcontracting plan similar to this one. Such plans will be reviewed by comparing them with the provisions of Public Law 95-507, and assuring that all minimum requirements of an acceptable subcontracting plan have been satisfied. The acceptability of percentage goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of potential small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned subcontractors, and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports, and/or, as time and availability of funds permit, periodic visits to subcontractors facilities to review applicable records and subcontracting program progress.

5. The bidder (contractor) agrees to submit such periodic reports and cooperate in any studies or surveys as may be required by the contracting agency or the Small business Administration in order to determine the extent of compliance by the bidder with the subcontracting plan and with the clause entitled Utilization of Small, veteran-owned small, HUBZone Small, Small Disadvantaged, and Women-Owned Small Business Concerns, contained in the contract.

6. The bidder (contractor) agrees that he will maintain at least the following types of records to document compliance with this subcontracting plan:

(a) Small, veteran-owned small, HUBZone Small, Small Disadvantaged, and Women-Owned Business concern source lists, guides and other data identifying SB/HZSB/SDB/WO vendors.

(b) Organizations contacted for small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned business sources.

(c) On a contract-by-contract basis, records on all subcontract solicitations over \$100,000, indicating on each solicitation (1) whether small business concerns were solicited, and if not, why not; (2) whether veteran-owned small business concerns were solicited, and if not, why not; (3) whether HUBZone small business concerns were solicited, and if not, why not; (4) whether small disadvantaged business concerns were solicited, and if not, why not; (5) whether women-owned business concerns were solicited and if not, why not; and (6) reasons for the failure of

solicited small, veteran-owned small, HUBZone small, small disadvantaged, or women-owned business concerns to receive the subcontract award.

(d) Records to support other outreach efforts: Contacts with Minority and Small Business Trade Associations, etc. Attendance at small and minority business procurement conferences and trade fairs.

(e) Records to support internal activities to guide and encourage buyers: Workshops, seminars, training programs, etc. Monitoring activities to evaluate compliance.

(f) On a contract-by-contract basis, records to support subcontract award data to include name and address or subcontractor .

(g) Records to be maintained in addition to the above are as follows:

Signed: _____
Typed Name: _____
Title: _____
Date: _____

Plan Accepted By: _____
Contracting Officer

Date: _____

NOTE TO CONTRACTING OFFICER: Upon incorporation of a plan into the contract, indicate herein the estimated dollar value of the contract:

\$ _____.

SECTION 00700 Contract Clauses

CLAUSES INCORPORATED BY FULL TEXT

52.202-1 DEFINITIONS (OCT 1995) --ALTERNATE I (APR 1984)

(a) "Head of the agency" (also called "agency head") or "Secretary" means the Secretary (or Attorney General, Administrator, Governor, Chairperson, or other chief official, as appropriate) of the agency, including any deputy or assistant chief official of the agency; and the term "authorized representative" means any person, persons, or board (other than the Contracting Officer) authorized to act for the head of the agency or Secretary.

(b) "Commercial component" means any component that is a commercial item.

(c) "Component" means any item supplied to the Federal Government as part of an end item or of another component.

(d) "Nondevelopmental item" means--

(1) Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;

(2) Any item described in paragraph (e)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or

(3) Any item of supply being produced that does not meet the requirements of paragraph (e)(1) or (e)(2) solely because the item is not yet in use.

(e) "Contracting Officer" means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the Contracting Officer acting within the limits of their authority as delegated by the Contracting Officer.

(f) Except as otherwise provided in this contract, the term "subcontracts" includes, but is not limited to, purchase orders and changes and modifications to purchase orders under this contract.

52.203-3 GRATUITIES (APR 1984)

(a) The right of the Contractor to proceed may be terminated by written notice if, after notice and hearing, the agency head or a designee determines that the Contractor, its agent, or another representative--

(1) Offered or gave a gratuity (e.g., an entertainment or gift) to an officer, official, or employee of the Government; and

(2) Intended, by the gratuity, to obtain a contract or favorable treatment under a contract.

(b) The facts supporting this determination may be reviewed by any court having lawful jurisdiction.

(c) If this contract is terminated under paragraph (a) of this clause, the Government is entitled--

(1) To pursue the same remedies as in a breach of the contract; and

(2) In addition to any other damages provided by law, to exemplary damages of not less than 3 nor more than 10

times the cost incurred by the Contractor in giving gratuities to the person concerned, as determined by the agency head or a designee. (This subparagraph (c)(2) is applicable only if this contract uses money appropriated to the Department of Defense.)

(d) The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-5 COVENANT AGAINST CONTINGENT FEES (APR 1984)

(a) The Contractor warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover, the full amount of the contingent fee.

(b) "Bona fide agency," as used in this clause, means an established commercial or selling agency, maintained by a contractor for the purpose of securing business, that neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds itself out as being able to obtain any Government contract or contracts through improper influence.

"Bona fide employee," as used in this clause, means a person, employed by a contractor and subject to the contractor's supervision and control as to time, place, and manner of performance, who neither exerts nor proposes to exert improper influence to solicit or obtain Government contracts nor holds out as being able to obtain any Government contract or contracts through improper influence.

"Contingent fee," as used in this clause, means any commission, percentage, brokerage, or other fee that is contingent upon the success that a person or concern has in securing a Government contract.

"Improper influence," as used in this clause, means any influence that induces or tends to induce a Government employee or officer to give consideration or to act regarding a Government contract on any basis other than the merits of the matter.

(End of clause)

52.203-7 ANTI-KICKBACK PROCEDURES. (JUL 1995)

(a) Definitions.

"Kickback," as used in this clause, means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided, directly or indirectly, to any prime Contractor, prime Contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a subcontract relating to a prime contract.

"Person," as used in this clause, means a corporation, partnership, business association of any kind, trust, joint-stock company, or individual.

"Prime contract," as used in this clause, means a contract or contractual action entered into by the United States for the purpose of obtaining supplies, materials, equipment, or services of any kind.

"Prime Contractor," as used in this clause, means a person who has entered into a prime contract with the United States.

"Prime Contractor employee," as used in this clause, means any officer, partner, employee, or agent of a prime Contractor.

"Subcontract," as used in this clause, means a contract or contractual action entered into by a prime Contractor or subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind under a prime contract.

"Subcontractor," as used in this clause, (1) means any person, other than the prime Contractor, who offers to furnish or furnishes any supplies, materials, equipment, or services of any kind under a prime contract or a subcontract entered into in connection with such prime contract, and (2) includes any person who offers to furnish or furnishes general supplies to the prime Contractor or a higher tier subcontractor.

"Subcontractor employee," as used in this clause, means any officer, partner, employee, or agent of a subcontractor.

(b) The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from -

(1) Providing or attempting to provide or offering to provide any kickback;

(2) Soliciting, accepting, or attempting to accept any kickback; or

(3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

(c)(1) The Contractor shall have in place and follow reasonable procedures designed to prevent and detect possible violations described in paragraph (b) of this clause in its own operations and direct business relationships.

(2) When the Contractor has reasonable grounds to believe that a violation described in paragraph (b) of this clause may have occurred, the Contractor shall promptly report in writing the possible violation. Such reports shall be made to the inspector general of the contracting agency, the head of the contracting agency if the agency does not have an inspector general, or the Department of Justice.

(3) The Contractor shall cooperate fully with any Federal agency investigating a possible violation described in paragraph (b) of this clause.

(4) The Contracting Officer may (i) offset the amount of the kickback against any monies owed by the United States under the prime contract and/or (ii) direct that the Prime Contractor withhold, from sums owed a subcontractor under the prime contract, the amount of any kickback. The Contracting Officer may order the monies withheld under subdivision (c)(4)(ii) of this clause be paid over to the Government unless the Government has already offset those monies under subdivision (c)(4)(i) of this clause. In either case, the Prime Contractor shall notify the Contracting Officer when the monies are withheld.

(5) The Contractor agrees to incorporate the substance of this clause, including this subparagraph (c)(5) but excepting subparagraph (c)(1), in all subcontracts under this contract which exceed \$100,000.

52.203-8 CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) If the Government receives information that a contractor or a person has engaged in conduct constituting a violation of subsection (a), (b), (c), or (d) of Section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423) (the Act), as amended by section 4304 of the 1996 National Defense Authorization Act for Fiscal Year 1996 (Pub. L. 104-106), the Government may--

(1) Cancel the solicitation, if the contract has not yet been awarded or issued; or

(2) Rescind the contract with respect to which--

(i) The Contractor or someone acting for the Contractor has been convicted for an offense where the conduct

constitutes a violation of subsection 27 (a) or (b) of the Act for the purpose of either--

(A) Exchanging the information covered by such subsections for anything of value; or

(B) Obtaining or giving anyone a competitive advantage in the award of a Federal agency procurement contract; or

(ii) The head of the contracting activity has determined, based upon a preponderance of the evidence, that the Contractor or someone acting for the Contractor has engaged in conduct constituting an offense punishable under subsections 27(e)(1) of the Act.

(b) If the Government rescinds the contract under paragraph (a) of this clause, the Government is entitled to recover, in addition to any penalty prescribed by law, the amount expended under the contract.

(c) The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law, regulation, or under this contract.

52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (JAN 1997)

(a) The Government, at its election, may reduce the price of a fixed-price type contract and the total cost and fee under a cost-type contract by the amount of profit or fee determined as set forth in paragraph (b) of this clause if the head of the contracting activity or designee determines that there was a violation of subsection 27 (a), (b), or (c) of the Office of Federal Procurement Policy Act, as amended (41 U.S.C. 423), as implemented in section 3.104 of the Federal Acquisition Regulation.

(b) The price or fee reduction referred to in paragraph (a) of this clause shall be--

(1) For cost-plus-fixed-fee contracts, the amount of the fee specified in the contract at the time of award;

(2) For cost-plus-incentive-fee contracts, the target fee specified in the contract at the time of award, notwithstanding any minimum fee or "fee floor" specified in the contract;

(3) For cost-plus-award-fee contracts--

(i) The base fee established in the contract at the time of contract award;

(ii) If no base fee is specified in the contract, 30 percent of the amount of each award fee otherwise payable to the Contractor for each award fee evaluation period or at each award fee determination point.

(4) For fixed-price-incentive contracts, the Government may--

(i) Reduce the contract target price and contract target profit both by an amount equal to the initial target profit specified in the contract at the time of contract award; or

(ii) If an immediate adjustment to the contract target price and contract target profit would have a significant adverse impact on the incentive price revision relationship under the contract, or adversely affect the contract financing provisions, the Contracting Officer may defer such adjustment until establishment of the total final price of the contract. The total final price established in accordance with the incentive price revision provisions of the contract shall be reduced by an amount equal to the initial target profit specified in the contract at the time of contract award and such reduced price shall be the total final contract price.

(5) For firm-fixed-price contracts, by 10 percent of the initial contract price or a profit amount determined by the Contracting Officer from records or documents in existence prior to the date of the contract award.

(c) The Government may, at its election, reduce a prime contractor's price or fee in accordance with the procedures

of paragraph (b) of this clause for violations of the Act by its subcontractors by an amount not to exceed the amount of profit or fee reflected in the subcontract at the time the subcontract was first definitively priced.

(d) In addition to the remedies in paragraphs (a) and (c) of this clause, the Government may terminate this contract for default. The rights and remedies of the Government specified herein are not exclusive, and are in addition to any other rights and remedies provided by law or under this contract.

(End of clause)

52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (JUN 1997)

(a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

- (1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.
- (2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.
- (3) A special Government employee, as defined in section 202, title 18, United States Code.
- (4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code, appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This

term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within 1 year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

(b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action--

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of--

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(c) Disclosure.

(1) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

(End of clause)

52.204-4 PRINTING OR COPYING DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

Postconsumer material means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postconsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

Printed or copied double-sided means printing or reproducing a document so that information is on both sides of a sheet of paper.

Recovered material, for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as --

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming, and other converting operations; bag, box, and carton manufacturing wastes; and butt rolls, mill wrappers, and rejected unused stock; and

(ii) Repulped finished paper and paperboard from obsolete inventories of paper and paperboard manufacturers, merchants, wholesalers, dealers, printers, converters, or others.

(b) In accordance with Section 101 of Executive Order 13101 of September 14, 1998, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, the Contractor is encouraged to submit paper documents, such as offers, letters, or reports, that are printed or copied double-sided on recycled paper that meet minimum content standards specified in Section 505 of Executive Order 13101, when not using electronic commerce methods to submit information or data to the Government.

(c) If the Contractor cannot purchase high-speed copier paper, offset paper, forms bond, computer printout paper, carbonless paper, file folders, white wove envelopes, writing and office paper, book paper, cotton fiber paper, and cover stock meeting the 30 percent postconsumer material standard for use in submitting paper documents to the Government, it should use paper containing no less than 20 percent postconsumer material. This lesser standard should be used only when paper meeting the 30 percent postconsumer material standard is not obtainable at a reasonable price or does not meet reasonable performance standards.

(End of clause)

52.209-6 PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (JUL 1995)

(a) The Government suspends or debar Contractors to protect the Government's interests. The Contractor shall not enter into any subcontract in excess of the \$25,000 with a Contractor that is debarred, suspended, or proposed for debarment unless there is a compelling reason to do so.

(b) The Contractor shall require each proposed first-tier subcontractor, whose subcontract will exceed \$25,000, to

disclose to the Contractor, in writing, whether as of the time of award of the subcontract, the subcontractor, or its principles, is or is not debarred, suspended, or proposed for debarment by the Federal Government.

(c) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is debarred, suspended, or proposed for debarment (see FAR 9.404 for information on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs). The notice must include the following:

(1) The name of the subcontractor.

(2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

(4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

(End of clause)

52.211-18 VARIATION IN ESTIMATED QUANTITY (APR 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified.

52.214-26 AUDIT AND RECORDS--SEALED BIDDING. (OCT 1997)

(a) As used in this clause, records includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the modification; or

(4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the date of this contract, is incorporated by reference in its entirety and made a part of this contract.

(1) If this contract is completely or partially terminated, the records relating to the work terminated shall be made available for 3 years after any resulting final termination settlement.

(2) Records pertaining to appeals under the Disputes clause or to litigation or the settlement of claims arising under or relating to the performance of this contract shall be made available until disposition of such appeals, litigation, or claims.

(e) The Contractor shall insert a clause containing all the provisions of this clause, including this paragraph (e), in all subcontracts expected to exceed the threshold in FAR 15.403-4(a)(1) for submission of cost or pricing data.

52.214-27 PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) This clause shall become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for the submission of cost or pricing data at FAR 15.403-4(a)(1), except that this clause does not apply to a modification if an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(b) If any price, including profit, negotiated in connection with any modification under this clause, was increased by any significant amount because

(1) the Contractor or a subcontractor furnished cost or pricing data that were not complete, accurate, and current as certified in its Certificate of Current Cost or Pricing Data;

(2) a subcontractor or prospective subcontractor furnished the Contractor cost or pricing data that were not complete, accurate, and current as certified in the Contractor's Certificate of Current Cost or Pricing Data; or

(3) any of these parties furnished data of any description that were not accurate, the price shall be reduced accordingly and the contract shall be modified to reflect the reduction. This right to a price reduction is limited to that resulting from defects in data relating to modifications for which this clause becomes operative under paragraph (a) above.

(c) Any reduction in the contract price under paragraph (b) above due to defective data from a prospective subcontractor that was not subsequently awarded the subcontract shall be limited to the amount, plus applicable overhead and profit markup, by which:

(1) the actual subcontract; or

(2) the actual cost to the Contractor, if there was no subcontract, was less than the prospective subcontract cost estimate submitted by the Contractor; provided, that the actual subcontract price was not itself affected by defective cost or pricing data.

(d) If the Contracting Officer determines under paragraph (b) of this clause that a price or cost reduction should be made:

(1) the Contractor agrees not to raise the following matters as a defense:

(i) The Contractor or subcontractor was a sole source supplier or otherwise was in a superior bargaining position and thus the price of the contract would not have been modified even if accurate, complete, and current cost or pricing data had been submitted;

(ii) The Contracting Officer should have known that the cost or pricing data in issue were defective even though the Contractor or subcontractor took no affirmative action to bring the character of the data to the attention of the Contracting Officer;

(iii) The contract was based on an agreement about the total cost of the contract and there was no agreement about the cost of each item procured under the contract; or

(iv) The Contractor or subcontractor did not submit a Certificate of Current Cost or Pricing Data.

(2) Except as prohibited by subdivision (d)(2)(ii) of this clause:

(i) an offset in an amount determined appropriate by the Contracting Officer based upon the facts shall be allowed against the amount of a contract price reduction if:

(A) The Contractor certifies to the Contracting Officer that, to the best of the Contractor's knowledge and belief, the Contractor is entitled to the offset in the amount requested; and

(B) The Contractor proves that the cost or pricing data were available before the date of agreement on the price of the contract (or price of the modification) and that the data were not submitted before such date.

(ii) An offset shall not be allowed if:

(A) The understated data was known by the Contractor to be understated when the Certificate of Current Cost or Pricing Data was signed; or (B) The Government proves that the facts demonstrate that the contract price would not have increased in the amount to be offset even if the available data had been submitted before the date of agreement on price.

(e) If any reduction in the contract price under this clause reduces the price of items for which payment was made prior to the date of the modification reflecting the price reduction, the Contractor shall be liable to and shall pay the United States at the time such overpayment is repaid:

(1) Simple interest on the amount of such overpayment to be computed from the date(s) of overpayment to the Contractor to the date the Government is repaid by the Contractor at the applicable underpayment rate effective for each quarter prescribed by the Secretary of the Treasury under 26 U.S.C. 6621(a)(2); and

(2) A penalty equal to the amount of the overpayment, if the Contractor or subcontractor knowingly submitted cost or pricing data which were incomplete, inaccurate, or noncurrent.

52.214-28 SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS - SEALED BIDDING. (OCT 1997)

(a) The requirements of paragraphs (b) and (c) of this clause shall:

(1) become operative only for any modification to this contract involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at (FAR) 48 CFR 15.403-4(a)(1); and

(2) be limited to such modifications.

(b) Before awarding any subcontract expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), on the date of agreement on price or the date of award, whichever is later; or before pricing any subcontract modifications involving aggregate increases and/or decreases in costs, plus applicable profits, expected to exceed the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1), the Contractor shall require the subcontractor to submit cost or pricing data (actually or by specific identification in writing), unless an exception under FAR 15.403-1(b) applies.

(1) Based on adequate price competition;

(2) Based on established catalog or market prices of commercial items sold in substantial quantities to the general public; or

(3) Set by law or regulation.

(c) The Contractor shall require the subcontractor to certify in substantially the form prescribed in subsection 15.406-2 of the Federal Acquisition Regulation that, to the best of its knowledge and belief, the data submitted under paragraph (b) above were accurate, complete, and current as of the date of agreement on the negotiated price of the subcontract or subcontract modification.

(d) The Contractor shall insert the substance of this clause, including this paragraph (d), in each subcontract that, when entered into, exceeds the threshold for submission of cost or pricing data at FAR 15.403-4(a)(1).

52.214-29 ORDER OF PRECEDENCE--SEALED BIDDING (JAN 1986)

Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order: (a) the Schedule (excluding the specifications); (b) representations and other instructions; (c) contract clauses; (d) other documents, exhibits, and attachments; and (e) the specifications.

(End of clause)

52.217-7 OPTION FOR INCREASED QUANTITY--SEPARATELY PRICED LINE ITEM (MAR 1989)

The Government may require the delivery of the numbered line item, identified in the Schedule as an option item, in the quantity and at the price stated in the Schedule. The Contracting Officer may exercise the option by written notice to the Contractor within 180 calendar days after issuance of notice to proceed. Delivery of added items shall continue at the same rate that like items are called for under the contract, unless the parties otherwise agree.

(End of clause)

52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2000)

(a) It is the policy of the United States that small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns shall have the maximum practicable opportunity to participate in performing contracts let by any Federal agency, including contracts and subcontracts for subsystems, assemblies, components, and related services for major systems. It is further the policy of the United States that its

prime contractors establish procedures to ensure the timely payment of amounts due pursuant to the terms of their subcontracts with small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, HUBZone small business concerns, small disadvantaged business concerns, and women-owned small business concerns.

(b) The Contractor hereby agrees to carry out this policy in the awarding of subcontracts to the fullest extent consistent with efficient contract performance. The Contractor further agrees to cooperate in any studies or surveys as may be conducted by the United States Small Business Administration or the awarding agency of the United States as may be necessary to determine the extent of the Contractor's compliance with this clause.

Definitions. As used in this contract--

HUBZone small business concern means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

Service-disabled veteran-owned small business concern--

(1) Means a small business concern--

(i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and

(ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

(2) Service-disabled veteran means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Small business concern means a small business as defined pursuant to Section 3 of the Small Business Act and relevant regulations promulgated pursuant thereto.

Small disadvantaged business concern means a small business concern that represents, as part of its offer that--

(1) It has received certification as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B;

(2) No material change in disadvantaged ownership and control has occurred since its certification;

(3) Where the concern is owned by one or more individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and

(4) It is identified, on the date of its representation, as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net).

Veteran-owned small business concern means a small business concern--

(1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and

(2) The management and daily business operations of which are controlled by one or more veterans.

Women-owned small business concern means a small business concern--

(1) That is at least 51 percent owned by one or more women, or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

(2) Whose management and daily business operations are controlled by one or more women.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as a small business concern, a veteran-owned small business concern, a service-disabled veteran-owned small business concern, a HUBZone small business concern, a small disadvantaged business concern, or a women-owned small business concern.

(End of clause)

52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (OCT 2000) ALTERNATE I (OCT 2000)

(a) This clause does not apply to small business concerns.

(b) Definitions. As used in this clause--

Commercial item means a product or service that satisfies the definition of commercial item in section 2.101 of the Federal Acquisition Regulation.

Commercial plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line).

Individual contract plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

Master plan means a subcontracting plan that contains all the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

Subcontract means any agreement (other than one involving an employer-employee relationship) entered into by a Federal Government prime Contractor or subcontractor calling for supplies or services required for performance of the contract or subcontract.

(c) The apparent low bidder, upon request by the Contracting Officer, shall submit a subcontracting plan, where applicable, that separately addresses subcontracting with small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns. If the bidder is submitting an individual contract plan, the plan must separately address subcontracting with small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, with a separate part for the basic contract and separate parts for each option (if any). The plan shall be included in and made a part of the resultant contract. The subcontracting plan shall be submitted within the time specified by the Contracting Officer. Failure to submit the subcontracting plan shall make the bidder ineligible for the award of a contract.

(d) The offeror's subcontracting plan shall include the following:

(1) Goals, expressed in terms of percentages of total planned subcontracting dollars, for the use of small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns as subcontractors. Service-disabled veteran-owned small business concerns meet the definition of veteran-owned small business concerns, and offerors may include them within the subcontracting plan goal for veteran-owned small business concerns. A separate goal for service-disabled veteran-owned small business concerns is not required. The offeror shall include all subcontracts that contribute to contract performance, and may include a proportionate share of products and services that are normally allocated as indirect costs.

(2) A statement of--

(i) Total dollars planned to be subcontracted for an individual contract plan; or the offeror's total projected sales, expressed in dollars, and the total value of projected subcontracts to support the sales for a commercial plan;

(ii) Total dollars planned to be subcontracted to small business concerns;

(iii) Total dollars planned to be subcontracted to veteran-owned small business concerns;

(iv) Total dollars planned to be subcontracted to HUBZone small business concerns;

(v) Total dollars planned to be subcontracted to small disadvantaged business concerns; and

(vi) Total dollars planned to be subcontracted to women-owned small business concerns.

(3) A description of the principal types of supplies and services to be subcontracted, and an identification of the types planned for subcontracting to--

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(4) A description of the method used to develop the subcontracting goals in paragraph (d)(1) of this clause.

(5) A description of the method used to identify potential sources for solicitation purposes (e.g., existing company source lists, the Procurement Marketing and Access Network (PRO-Net) of the Small Business Administration (SBA), veterans service organizations, the National Minority Purchasing Council Vendor Information Service, the Research and Information Division of the Minority Business Development Agency in the Department of Commerce, or small, HUBZone, small disadvantaged, and women-owned small business trade associations). A firm may rely on the information contained in PRO-Net as an accurate representation of a concern's size and ownership characteristics for the purposes of maintaining a small, veteran-owned small, HUBZone small, small disadvantaged, and women-owned small business source list. Use of PRO-Net as its source list does not relieve a firm of its responsibilities (e.g., outreach, assistance, counseling, or publicizing subcontracting opportunities) in this clause.

(6) A statement as to whether or not the offeror included indirect costs in establishing subcontracting goals, and a description of the method used to determine the proportionate share of indirect costs to be incurred with—

(i) Small business concerns;

(ii) Veteran-owned small business concerns;

(iii) HUBZone small business concerns;

(iv) Small disadvantaged business concerns; and

(v) Women-owned small business concerns.

(7) The name of the individual employed by the offeror who will administer the offeror's subcontracting program, and a description of the duties of the individual.

(8) A description of the efforts the offeror will make to assure that small business, veteran-owned small business, HUBZone small business, small disadvantaged business and women-owned small business concerns have an equitable opportunity to compete for subcontracts.

(9) Assurances that the offeror will include the clause of this contract entitled ``Utilization of Small Business Concerns" in all subcontracts that offer further subcontracting opportunities, and that the offeror will require all subcontractors (except small business concerns) that receive subcontracts in excess of \$500,000 (\$1,000,000 for construction of any public facility) to adopt a subcontracting plan that complies with the requirements of this clause.

(10) Assurances that the offeror will--

(i) Cooperate in any studies or surveys as may be required;

(ii) Submit periodic reports so that the Government can determine the extent of compliance by the offeror with the subcontracting plan;

(iii) Submit Standard Form (SF) 294, Subcontracting Report for Individual Contracts, and/or SF 295, Summary Subcontract Report, in accordance with paragraph (j) of this clause. The reports shall provide information on subcontract awards to small business concerns, veteran-owned small business concerns, service-disabled veteran-owned small business concerns, small disadvantaged business concerns, women-owned small business concerns, and Historically Black Colleges and Universities and Minority Institutions. Reporting shall be in accordance with the instructions on the forms or as provided in agency regulations.

(iv) Ensure that its subcontractors agree to submit SF 294 and SF 295.

(11) A description of the types of records that will be maintained concerning procedures that have been adopted to comply with the requirements and goals in the plan, including establishing source lists; and a description of the offeror's efforts to locate small business, veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns and award subcontracts to them. The records shall include at least the following (on a plant-wide or company-wide basis, unless otherwise indicated)

(i) Source lists (e.g., PRO-Net), guides, and other data that identify small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns.

(ii) Organizations contacted in an attempt to locate sources that are small business, veteran-owned small business, HUBZone small business, small disadvantaged business, or women-owned small business concerns.

(iii) Records on each subcontract solicitation resulting in an award of more than \$100,000, indicating--

(A) Whether small business concerns were solicited and, if not, why not;

(B) Whether veteran-owned small business concerns were solicited and, if not, why not;

(C) Whether HUBZone small business concerns were solicited and, if not, why not;

(D) Whether small disadvantaged business concerns were solicited and, if not, why not;

(E) Whether women-owned small business concerns were solicited and, if not, why not; and

(F) If applicable, the reason award was not made to a small business concern.

(iv) Records of any outreach efforts to contact--

(A) Trade associations;

(B) Business development organizations;

(C) Conferences and trade fairs to locate small, HUBZone small, small disadvantaged, and women-owned small business sources; and

(D) Veterans service organizations.

(v) Records of internal guidance and encouragement provided to buyers through--

(A) Workshops, seminars, training, etc.; and

(B) Monitoring performance to evaluate compliance with the program's requirements.

(vi) On a contract-by-contract basis, records to support award data submitted by the offeror to the Government, including the name, address, and business size of each subcontractor. Contractors having commercial plans need not comply with this requirement.

(e) In order to effectively implement this plan to the extent consistent with efficient contract performance, the Contractor shall perform the following functions:

(1) Assist small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns by arranging solicitations, time for the preparation of bids, quantities, specifications, and delivery schedules so as to facilitate the participation by such concerns. Where the Contractor's lists of potential small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.

(2) Provide adequate and timely consideration of the potentialities of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns in all "make-or-buy" decisions.

(3) Counsel and discuss subcontracting opportunities with representatives of small business, veteran-owner small business, HUBZone small business, small disadvantaged business, and women-owned small business firms.

(4) Provide notice to subcontractors concerning penalties and remedies for misrepresentations of business status as small, veteran-owner small business, HUBZone small, small disadvantaged, or women-owned small business for the purpose of obtaining a subcontract that is to be included as part or all of a goal contained in the Contractor's subcontracting plan.

(f) A master plan on a plant or division-wide basis that contains all the elements required by paragraph (d) of this clause, except goals, may be incorporated by reference as a part of the subcontracting plan required of the offeror by this clause; provided--

(1) the master plan has been approved, (2) the offeror ensures that the master plan is updated as necessary and provides copies of the approved master plan, including evidence of its approval, to the Contracting Officer, and (3) goals and any deviations from the master plan deemed necessary by the Contracting Officer to satisfy the requirements of this contract are set forth in the individual subcontracting plan.

(g) A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items. The commercial plan shall relate to the offeror's planned subcontracting generally, for both commercial and Government business, rather than solely to the Government contract. Commercial plans are also preferred for subcontractors that provide commercial items under a prime contract, whether or not the prime contractor is supplying a commercial item.

(h) Prior compliance of the offeror with other such subcontracting plans under previous contracts will be considered by the Contracting Officer in determining the responsibility of the offeror for award of the contract.

(i) The failure of the Contractor or subcontractor to comply in good faith with (1) the clause of this contract entitled "Utilization Of Small Business Concerns," or (2) an approved plan required by this clause, shall be a material breach of the contract.

(j) The Contractor shall submit the following reports:

(1) Standard Form 294, Subcontracting Report for Individual Contracts. This report shall be submitted to the Contracting Officer semiannually and at contract completion. The report covers subcontract award data related to this contract. This report is not required for commercial plans.

(2) Standard Form 295, Summary Subcontract Report. This report encompasses all of the contracts with the awarding agency. It must be submitted semi-annually for contracts with the Department of Defense and annually for contracts with civilian agencies. If the reporting activity is covered by a commercial plan, the reporting activity must report annually all subcontract awards under that plan. All reports submitted at the close of each fiscal year (both individual and commercial plans) shall include a breakout, in the Contractor's format, of subcontract awards, in whole dollars, to small disadvantaged business concerns by North American Industry Classification System (NAICS) Industry Subsector. For a commercial plan, the Contractor may obtain from each of its subcontractors a predominant NAICS Industry Subsector and report all awards to that subcontractor under its predominant NAICS Industry Subsector.

(End of clause)

52.222-1 NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)

If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this contract, the Contractor shall immediately give notice, including all relevant information, to the Contracting Officer.

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands. This limitation, however, shall not prohibit the employment by the Contractor in the performance of this contract of persons on parole or probation to work at paid employment during the term of their sentence or persons who have been pardoned or who have served their terms. Nor shall it prohibit the employment by the Contractor in the performance of this contract of persons confined for violation of the laws of any of the States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or the Trust Territory of the Pacific Islands who are authorized to work at paid employment in the community under the laws of such jurisdiction, if--

(a)(1) The worker is paid or is in an approved work training program on a voluntary basis;

(2) Representatives of local union central bodies or similar labor union organizations have been consulted;

(3) Such paid employment will not result in the displacement of employed workers, or be applied in skills, crafts, or trades in which there is a surplus of available gainful labor in the locality, or impair existing contracts for services; and

(4) The rates of pay and other conditions of employment will not be less than those paid or provided for work of a similar nature in the locality in which the work is being performed; and

(b) The Attorney General of the United States has certified that the work-release laws or regulations of the jurisdiction involved are in conformity with the requirements of Executive Order 11755, as amended by Executive

Orders 12608 and 12943.

(End of clause)

52.222-4 CONTRACT WORK HOURS AND SAFETY STANDARDS ACT - OVERTIME COMPENSATION.
(SEP 2000)

(a) Overtime requirements. No Contractor or subcontractor employing laborers or mechanics (see Federal Acquisition Regulation 22.300) shall require or permit them to work over 40 hours in any workweek unless they are paid at least 1 and 1/2 times the basic rate of pay for each hour worked over 40 hours.

(b) Violation; liability for unpaid wages; liquidated damages. The responsible Contractor and subcontractor are liable for unpaid wages if they violate the terms in paragraph (a) of this clause. In addition, the Contractor and subcontractor are liable for liquidated damages payable to the Government. The Contracting Officer will assess liquidated damages at the rate of \$10 per affected employee for each calendar day on which the employer required or permitted the employee to work in excess of the standard workweek of 40 hours without paying overtime wages required by the Contract Work Hours and Safety Standards Act.

(c) Withholding for unpaid wages and liquidated damages. The Contracting Officer will withhold from payments due under the contract sufficient funds required to satisfy any Contractor or subcontractor liabilities for unpaid wages and liquidated damages. If amounts withheld under the contract are insufficient to satisfy Contractor or subcontractor liabilities, the Contracting Officer will withhold payments from other Federal or Federally assisted contracts held by the same Contractor that are subject to the Contract Work Hours and Safety Standards Act.

(d) Payrolls and basic records.

(1) The Contractor and its subcontractors shall maintain payrolls and basic payroll records for all laborers and mechanics working on the contract during the contract and shall make them available to the Government until 3 years after contract completion. The records shall contain the name and address of each employee, social security number, labor classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records need not duplicate those required for construction work by Department of Labor regulations at 29 CFR 5.5(a)(3) implementing the Davis -Bacon Act.

(2) The Contractor and its subcontractors shall allow authorized representatives of the Contracting Officer or the Department of Labor to inspect, copy, or transcribe records maintained under paragraph (d)(1) of this clause. The Contractor or subcontractor also shall allow authorized representatives of the Contracting Officer or Department of Labor to interview employees in the workplace during working hours.

(e) Subcontracts. The Contractor shall insert the provisions set forth in paragraphs (a) through (d) of this clause in subcontracts exceeding \$100,000 and require subcontractors to include these provisions in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the provisions set forth in paragraphs (a) through (d) of this clause.

(End of clause)

52.222-6 DAVIS-BACON ACT (FEB 1995)

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis -Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (d) of this clause; also,

regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such period. Such laborers and mechanics shall be paid not less than the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in the clause entitled Apprentices and Trainees. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (b) of this clause) and the Davis -Bacon poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(b)(1) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination.

(ii) The classification is utilized in the area by the construction industry.

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits, where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator or an authorized representative will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(3) In the event the Contractor, the laborers or mechanics to be employed in the classification, or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits, where appropriate) determined pursuant to subparagraphs (b)(2) and (b)(3) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis -Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

52.222-7 WITHHOLDING OF FUNDS (FEB 1988)

The Contracting Officer shall, upon his or her own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same Prime Contractor, or any other Federally assisted contract subject to Davis -Bacon prevailing wage requirements, which is held by the same Prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

52.222-8 PAYROLLS AND BASIC RECORDS (FEB 1988)

(a) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of 3 years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis -Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under paragraph (d) of the clause entitled Davis -Bacon Act, that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis -Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(b)(1) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph (a) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Prime Contractor is responsible for the submission of copies of payrolls by all subcontractors.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify--

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph (a) of this clause and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR Part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-

347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph (b)(2) of this clause.

(4) The falsification of any of the certifications in this clause may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(c) The Contractor or subcontractor shall make the records required under paragraph (a) of this clause available for inspection, copying, or transcription by the Contracting Officer or authorized representatives of the Contracting Officer or the Department of Labor. The Contractor or subcontractor shall permit the Contracting Officer or representatives of the Contracting Officer or the Department of Labor to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit required records or to make them available, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

52.222-9 APPRENTICES AND TRAINEES (FEB 1988)

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training

plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

52.222-10 COMPLIANCE WITH COPELAND ACT REQUIREMENTS (FEB 1988)

The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.

52.222-11 SUBCONTRACTS (LABOR STANDARDS (FEB 1988)

(a) The Contractor or subcontractor shall insert in any subcontracts the clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act-Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Withholding of Funds, Subcontracts (Labor Standards), Contract Termination-Debarment, Disputes Concerning Labor Standards, Compliance with Davis -Bacon and Related Act Regulations, and Certification of Eligibility, and such other clauses as the Contracting Officer may, by appropriate instructions, require, and also a clause requiring subcontractors to include these clauses in any lower tier subcontracts. The Prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with all the contract clauses cited in this paragraph.

(b)(1) Within 14 days after award of the contract, the Contractor shall deliver to the Contracting Officer a completed Statement and Acknowledgment Form (SF 1413) for each subcontract, including the subcontractor's signed and dated acknowledgment that the clauses set forth in paragraph (a) of this clause have been included in the subcontract.

(2) Within 14 days after the award of any subsequently awarded subcontract the Contractor shall deliver to the Contracting Officer an updated completed SF 1413 for such additional subcontract.

52.222-12 CONTRACT TERMINATION--DEBARMENT (FEB 1988)

A breach of the contract clauses entitled Davis -Bacon Act, Contract Work Hours and Safety Standards Act--Overtime Compensation, Apprentices and Trainees, Payrolls and Basic Records, Compliance with Copeland Act Requirements, Subcontracts (Labor Standards), Compliance with Davis -Bacon and Related Act Regulations, or Certification of Eligibility may be grounds for termination of the contract, and for debarment as a Contractor and subcontractor as provided in 29 CFR 5.12.

52.222-13 COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS (FEB 1988)

All rulings and interpretations of the Davis -Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are hereby incorporated by reference in this contract.

52.222-14 DISPUTES CONCERNING LABOR STANDARDS (FEB 1988)

The United States Department of Labor has set forth in 29 CFR Parts 5, 6, and 7 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

52.222-15 CERTIFICATION OF ELIGIBILITY (FEB 1988)

- (a) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (c) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

52.222-21 PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)

- (a) Segregated facilities, as used in this clause, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes.
- (b) The Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract.
- (c) The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.

(End of clause)

52.222-23 NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY FOR CONSTRUCTION (FEB 1999)

- (a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.
- (b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

| Goals for minority participation for each trade | Goals for female participation for each trade |
|---|---|
| 17.3% | 6.9% |

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the

goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

- (1) Name, address, and telephone number of the subcontractor;
- (2) Employer's identification number of the subcontractor;
- (3) Estimated dollar amount of the subcontract;
- (4) Estimated starting and completion dates of the subcontract; and
- (5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is NJ, Burlington, McGuire AFB.

52.222-26 EQUAL OPPORTUNITY (FEB 1999)

(a) If, during any 12-month period (including the 12 months preceding the award of this contract), the Contractor has been or is awarded nonexempt Federal contracts and/or subcontracts that have an aggregate value in excess of \$10,000, the Contractor shall comply with subparagraphs (b)(1) through (11) of this clause. Upon request, the Contractor shall provide information necessary to determine the applicability of this clause.

(b) During performing this contract, the Contractor agrees as follows:

(1) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. However, it shall not be a violation of this clause for the Contractor to extend a publicly announced preference in employment to Indians living on or near an Indian reservation, in connection with employment opportunities on or near an Indian reservation, as permitted by 41 CFR 60-1.5.

(2) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. This shall include, but not be limited to, (i) employment, (ii) upgrading, (iii) demotion, (iv) transfer, (v) recruitment or recruitment advertising, (vi) layoff or termination, (vii) rates of pay or other forms of compensation, and (viii) selection for training, including apprenticeship.

(3) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.

(4) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race,

color, religion, sex, or national origin.

(5) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(6) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(7) The Contractor shall furnish to the contracting agency all information required by Executive Order 11246, as amended, and by the rules, regulations, and orders of the Secretary of Labor. The Contractor shall also file Standard Form 100 (EEO-1), or any successor form, as prescribed in 41 CFR part 60-1. Unless the Contractor has filed within the 12 months preceding the date of contract award, the Contractor shall, within 30 days after contract award, apply to either the regional Office of Federal Contract Compliance Programs (OFCCP) or the local office of the Equal Employment Opportunity Commission for the necessary forms.

(8) The Contractor shall permit access to its premises, during normal business hours, by the contracting agency or the OFCCP for the purpose of conducting on-site compliance evaluations and complaint investigations. The Contractor shall permit the Government to inspect and copy any books, accounts, records (including computerized records), and other material that may be relevant to the matter under investigation and pertinent to compliance with Executive Order 11246, as amended, and rules and regulations that implement the Executive Order.

(9) If the OFCCP determines that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts, under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended; in the rules, regulations, and orders of the Secretary of Labor; or as otherwise provided by law.

(10) The Contractor shall include the terms and conditions of subparagraphs (b)(1) through (11) of this clause in every subcontract or purchase order that is not exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor.

(11) The Contractor shall take such action with respect to any subcontract or purchase order as the contracting officer may direct as a means of enforcing these terms and conditions, including sanctions for noncompliance; provided, that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of any direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

(c) Notwithstanding any other clause in this contract, disputes relative to this clause will be governed by the procedures in 41 CFR 60-1.1.

52.222-27 AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION (FEB 1999)

(a) Definitions. "Covered area," as used in this clause, means the geographical area described in the solicitation for this contract.

"Deputy Assistant Secretary," as used in this clause, means Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, or a designee.

"Employer's identification number," as used in this clause, means the Federal Social Security number used on the employer's quarterly federal tax return, U.S. Treasury Department Form 941.

"Minority," as used in this clause, means--

(1) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

(2) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands);

(3) Black (all persons having origins in any of the black African racial groups not of Hispanic origin); and

(4) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).

(b) If the Contractor, or a subcontractor at any tier, subcontracts a portion of the work involving any construction trade, each such subcontract in excess of \$10,000 shall include this clause and the Notice containing the goals for minority and female participation stated in the solicitation for this contract.

(c) If the Contractor is participating in a Hometown Plan (41 CFR 60-4) approved by the U.S. Department of Labor in a covered area, either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with the plan for those trades that have unions participating in the plan. Contractors must be able to demonstrate participation in, and compliance with, the provisions of the plan. Each Contractor or subcontractor participating in an approved plan is also required to comply with its obligations under the Equal Opportunity clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good-faith performance by other Contractors or subcontractors toward a goal in an approved plan does not excuse any Contractor's or subcontractor's failure to make good-faith efforts to achieve the plan's goals.

(d) The Contractor shall implement the affirmative action procedures in subparagraphs (g)(1) through (16) of this clause. The goals stated in the solicitation for this contract are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where that work is actually performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

(e) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with which the Contractor has a collective bargaining agreement, to refer minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.

(f) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

(g) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and implement affirmative action steps at least as extensive as the following:

(1) Ensure a working environment free of harassment, intimidation, and coercion at all sites and in all facilities where the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall ensure that foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.

(2) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(3) Establish and maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations, and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.

(4) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(5) Develop on-the-job training opportunities and/or participate in training programs for the area that expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph (g)(2) of this clause.

(6) Disseminate the Contractor's equal employment policy by--

(i) Providing notice of the policy to unions and to training, recruitment, and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its contract obligations;

(ii) Including the policy in any policy manual and in collective bargaining agreements;

(iii) Publicizing the policy in the company newspaper, annual report, etc.;

(iv) Reviewing the policy with all management personnel and with all minority and female employees at least once a year; and

(v) Posting the policy on bulletin boards accessible to employees at each location where construction work is performed.

(7) Review, at least annually, the Contractor's equal employment policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination, or other employment decisions. Conduct review of this policy with all on-site supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(8) Disseminate the Contractor's equal employment policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to, and discuss this policy with, other Contractors and subcontractors with which the Contractor does or anticipates doing business.

(9) Direct recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than 1 month before the date for acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(10) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after-school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's workforce.

(11) Validate all tests and other selection requirements where required under 41 CFR 60-3.

(12) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.

(13) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the Contractor's obligations under this contract are being carried out.

(14) Ensure that all facilities and company activities are nonsegregated except that separate or single-user rest rooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.

(15) Maintain a record of solicitations for subcontracts for minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

(16) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment policy and affirmative action obligations.

(h) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs (g)(1) through (16) of this clause. The efforts of a contractor association, joint contractor-union, contractor-community, or similar group of which the contractor is a member and participant may be asserted as fulfilling one or more of its obligations under subparagraphs (g)(1) through (16) of this clause, provided the Contractor--

(1) Actively participates in the group;

(2) Makes every effort to ensure that the group has a positive impact on the employment of minorities and women in the industry;

(3) Ensures that concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;

(4) Makes a good-faith effort to meet its individual goals and timetables; and

(5) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

(i) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.

(j) The Contractor shall not use goals or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

(k) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.

(l) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Opportunity clause, including suspension, termination, and cancellation of existing subcontracts, as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the OFCCP. Any failure to carry out these sanctions and penalties as ordered shall be a violation of this clause and Executive Order 11246, as amended.

(m) The Contractor in fulfilling its obligations under this clause shall implement affirmative action procedures at least as extensive as those prescribed in paragraph (g) of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of Executive Order 11246, as amended, the implementing regulations, or this clause, the Deputy Assistant Secretary shall take action as prescribed in 41 CFR 60-4.8.

(n) The Contractor shall designate a responsible official to--

(1) Monitor all employment-related activity to ensure that the Contractor's equal employment policy is being carried out;

(2) Submit reports as may be required by the Government; and

(3) Keep records that shall at least include for each employee the name, address, telephone number, construction trade, union affiliation (if any), employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

Nothing contained herein shall be construed as a limitation upon the application of other laws that establish different standards of compliance or upon the requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

52.222-35 AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (APR 1998)

(a)) Definitions. As used in this clause--

All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting 3 days or less. This term includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment.

Appropriate office of the State employment service system means the local office of the Federal-State national system of public employment offices with assigned responsibility to serve the area where the employment opening is to be filled, including the District of Columbia, Guam, the Commonwealth of Puerto Rico, and the Virgin Islands.

Positions that will be filled from within the Contractor's organization means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings that the Contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of its organization.

Veteran of the Vietnam era means a person who--

(1) Served on active duty for a period of more than 180 days, any part of which occurred between August 5, 1964, and May 7, 1975, and was discharged or released therefrom with other than a dishonorable discharge; or

(2) Was discharged or released from active duty for a service-connected disability if any part of such active duty was performed between August 5, 1964, and May 7, 1975.

(b) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against the individual because the individual is a disabled veteran or a veteran of the Vietnam era. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise

treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans' status in all employment practices such as --

- (i) Employment;
- (ii) Upgrading;
- (iii) Demotion or transfer;
- (iv) Recruitment;
- (v) Advertising;
- (vi) Layoff or termination;
- (vii) Rates of pay or other forms of compensation; and
- (viii) Selection for training, including apprenticeship.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Vietnam Era Veterans' Readjustment Assistance Act of 1972 (the Act), as amended.

(c) Listing openings. (1) The Contractor agrees to list all employment openings existing at contract award or occurring during contract performance, at an appropriate office of the State employment service system in the locality where the opening occurs. These openings include those occurring at any Contractor facility, including one not connected with performing this contract. An independent corporate affiliate is exempt from this requirement.

(2) State and local government agencies holding Federal contracts of \$ 10,000 or more shall also list all their employment openings with the appropriate office of the State employment service.

(3) The listing of employment openings with the State employment service system is required at least concurrently with using any other recruitment source or effort and involves the obligations of placing a bona fide job order, including accepting referrals of veterans and nonveterans. This listing does not require hiring any particular job applicant or hiring from any particular group of job applicants and is not intended to relieve the Contractor from any requirements of Executive orders or regulations concerning nondiscrimination in employment.

(4) Whenever the Contractor becomes contractually bound to the listing terms of this clause, it shall advise the State employment service system, in each State where it has establishments, of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these terms and has so advised the State system, it need not advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(d) Applicability. This clause does not apply to the listing of employment openings that occur and are filled outside the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.

(e) Postings. (1) The Contractor agrees to post employment notices stating (i) the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era, and (ii) the rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. They shall be in a form prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, Department of Labor (Deputy Assistant Secretary), and provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Act, and is

committed to take affirmative action to employ, and advance in employment, qualified disabled veterans and veterans of the Vietnam Era.

(f) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(g) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-36 AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES (JUN 1998)

(a) General. (1) Regarding any position for which the employee or applicant for employment is qualified, the Contractor shall not discriminate against any employee or applicant because of physical or mental disability. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified individuals with disabilities without discrimination based upon their physical or mental disability in all employment practices such as--

(i) Recruitment, advertising, and job application procedures;

(ii) Hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff, and rehiring;

(iii) Rates of pay or any other form of compensation and changes in compensation;

(iv) Job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;

(v) Leaves of absence, sick leave, or any other leave;

(vi) Fringe benefits available by virtue of employment, whether or not administered by the Contractor;

(vii) Selection and financial support for training, including apprenticeships, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;

(viii) Activities sponsored by the Contractor, including social or recreational programs; and

(ix) Any other term, condition, or privilege of employment.

(2) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor (Secretary) issued under the Rehabilitation Act of 1973 (29 U.S.C. 793) (the Act), as amended.

(b) Postings. (1) The Contractor agrees to post employment notices stating--

(i) The Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified individuals with disabilities; and

(ii) The rights of applicants and employees.

(2) These notices shall be posted in conspicuous places that are available to employees and applicants for employment. The Contractor shall ensure that applicants and employees with disabilities are informed of the contents of the notice (e.g., the Contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair). The notices shall be in a form prescribed by

the Deputy Assistant Secretary for Federal Contract Compliance of the U.S. Department of Labor (Deputy Assistant Secretary) and shall be provided by or through the Contracting Officer.

(3) The Contractor shall notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Act and is committed to take affirmative action to employ, and advance in employment, qualified individuals with physical or mental disabilities.

(c) Noncompliance. If the Contractor does not comply with the requirements of this clause, appropriate actions may be taken under the rules, regulations, and relevant orders of the Secretary issued pursuant to the Act.

(d) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order in excess of \$10,000 unless exempted by rules, regulations, or orders of the Secretary. The Contractor shall act as specified by the Deputy Assistant Secretary to enforce the terms, including action for noncompliance.

(End of clause)

52.222-37 EMPLOYMENT REPORTS ON DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA (JAN 1999)

(a) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The number of disabled veterans and the number of veterans of the Vietnam era in the workforce of the contractor by job category and hiring location; and

(2) The total number of new employees hired during the period covered by the report, and of that total, the number of disabled veterans, and the number of veterans of the Vietnam era.

(b) The above items shall be reported by completing the form entitled "Federal Contractor Veterans' Employment Report VETS-100."

(c) Reports shall be submitted no later than September 30 of each year beginning September 30, 1988.

(d) The employment activity report required by paragraph (a)(2) of this clause shall reflect total hires during the most recent 12-month period as of the ending date selected for the employment profile report required by paragraph (a)(1) of this clause. Contractors may select an ending date: (1) As of the end of any pay period during the period January through March 1st of the year the report is due, or (2) as of December 31, if the contractor has previous written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(e) The count of veterans reported according to paragraph (a) of this clause shall be based on voluntary disclosure. Each Contractor subject to the reporting requirements at 38 U.S.C. 4212 shall invite all disabled veterans and veterans of the Vietnam era who wish to benefit under the affirmative action program at 38 U.S.C. 4212 to identify themselves to the Contractor. The invitation shall state that the information is voluntarily provided; that the information will be kept confidential; that disclosure or refusal to provide the information will not subject the applicant or employee to any adverse treatment; and that the information will be used only in accordance with the regulations promulgated under 38 U.S.C. 4212.

(f) Subcontracts. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary.

(End of clause)

52.223-6 DRUG-FREE WORKPLACE (JAN 1997)

(a) Definitions. As used in this clause --

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual, shall-- within 30 days after award (unless a longer period is agreed to in writing for contracts of 30 days or more performance duration), or as soon as possible for contracts of less than 30 days performance duration--

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the

following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

- (i) Taking appropriate personnel action against such employee, up to and including termination; or
 - (ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and
- (7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.
- (c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance while performing this contract.
- (d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraph (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

(End of clause)

52.223-14 TOXIC CHEMICAL RELEASE REPORTING (OCT 2000)

(a) Unless otherwise exempt, the Contractor, as owner or operator of a facility used in the performance of this contract, shall file by July 1 for the prior calendar year an annual Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023(a) and (g)), and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106). The Contractor shall file, for each facility subject to the Form R filing and reporting requirements, the annual Form R throughout the life of the contract.

(b) A Contractor owned or operated facility used in the performance of this contract is exempt from the requirement to file an annual Form R if--

- (1) The facility does not manufacture, process, or otherwise use any toxic chemicals listed under section 313(c) of EPCRA, 42 U.S.C. 11023(c);
- (2) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);
- (3) The facility does not meet the reporting thresholds of toxic chemicals established under of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);
- (4) The facility does not fall within Standard Industrial Classification Code (SIC) major groups 20 through 39 or their corresponding North American Industry Classification System (NAICS) sectors 31 through 33; or
- (5) The facility is not located within any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, or any other territory or possession over which the United States has jurisdiction.

(c) If the Contractor has certified to an exemption in accordance with one or more of the criteria in paragraph (b) of this clause, and after award of the contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

- (1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

52.225-9 BUY AMERICAN ACT --BALANCE OF PAYMENTS PROGRAM—CONSTRUCTION MATERIALS (FEB 2000)

(a) Definitions. As used in this clause--

Component means any article, material, or supply incorporated directly into construction materials.

Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Domestic construction material means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

Foreign construction material means a construction material other than a domestic construction material.

United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.

(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) and the Balance of Payments Program by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:
none

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent. For determination of unreasonable cost under the Balance of Payments Program, the Contracting Officer will use a factor of 50 percent;

(ii) The application of the restriction of the Buy American Act or Balance of Payments Program to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act or Balance of Payments Program. (1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act or Balance of Payments Program applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act or Balance of Payments Program applies, use of foreign construction material is noncompliant with the Buy American Act or Balance of Payments Program.

(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

| Construction material description | Unit of measure | Quantity | Price (dollars) \1\ |
|-----------------------------------|-----------------|----------|---------------------|
| Item 1 | | | |
| Foreign construction material.... | | | |
| Domestic construction material... | | | |
| Item 2 | | | |
| Foreign construction material.... | | | |
| Domestic construction material... | | | |

Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).

List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.

Include other applicable supporting information.

(End of clause)

52.225-13 RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUL 2000)

(a) The Contractor shall not acquire, for use in the performance of this contract, any supplies or services originating from sources within, or that were located in or transported from or through, countries whose products are banned from importation into the United States under regulations of the Office of Foreign Assets Control, Department of the Treasury. Those countries are Cuba, Iran, Iraq, Libya, North Korea, Sudan, the territory of Afghanistan controlled by the Taliban, and Serbia (excluding the territory of Kosovo).

(b) The Contractor shall not acquire for use in the performance of this contract any supplies or services from entities controlled by the government of Iraq.

(c) The Contractor shall insert this clause, including this paragraph (c), in all subcontracts.

(End of clause)

52.226-1 UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)

(a) Definitions. As used in this clause:

"Indian" means any person who is a member of any Indian tribe, band, group, pueblo or community that is

recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs (BIA) in accordance with 25 U.S.C. 1452(c) and any "Native" as defined in the Alaska Native Claims Settlement Act (43 U.S.C. 1601).

"Indian organization" means the governing body of any Indian tribe or entity established or recognized by the governing body of an Indian tribe for the purposes of 25 U.S.C., chapter 17.

"Indian-owned economic enterprise" means any Indian-owned (as determined by the Secretary of the Interior) commercial, industrial, or business activity established or organized for the purpose of profit, provided that Indian ownership constitute a not less than 51 percent of the enterprise.

"Indian tribe" means any Indian tribe, band, group, pueblo or community, including native villages and native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, that is recognized by the Federal Government as eligible for services from BIA in accordance with 25 U.S.C. 1542(c).

"Interested party" means a prime contractor or an actual or prospective offeror whose direct economic interest would be affected by the award of a subcontract or by the failure to award a subcontract.

(b) The Contractor shall use its best efforts to give Indian organizations and Indian-owned economic enterprises (25 U.S.C. 1544) the maximum practicable opportunity to participate in the subcontracts it awards to the fullest extent consistent with efficient performance of its contract.

(1) The Contracting Officer and the Contractor, acting in good faith, may rely on the representation of an Indian organization or Indian-owned economic enterprise as to its eligibility, unless an interested party challenges its status or the Contracting Officer has independent reason to question that status. In the event of a challenge to the representation of a subcontractor, the Contracting Officer will refer the matter to the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), Attn: Chief, Division of Contracting and Grants Administration, 1849 C Street, NW., MS 2626-MIB, Washington, DC 20240-4000.

The BIA will determine the eligibility and notify the Contracting Officer. No incentive payment will be made within 50 working days of subcontract award or while a challenge is pending. If a subcontractor is determined to be an ineligible participant, no incentive payment will be made under the Indian Incentive Program.

(2) The Contractor may request an adjustment under the Indian Incentive Program to the following:

(i) The estimated cost of a cost-type contract.

(ii) The target cost of a cost-plus-incentive-fee prime contract.

(iii) The target cost and ceiling price of a fixed-price incentive prime contract.

(iv) The price of a firm-fixed-price prime contract.

(3) The amount of the adjustment to the prime contract is 5 percent of the estimated cost, target cost, or firm-fixed-price included in the subcontract initially awarded to the Indian organization or Indian-owned economic enterprise.

(4) The Contractor has the burden of proving the amount claimed and must assert its request for an adjustment prior to completion of contract performance.

(c) The Contracting Officer, subject to the terms and conditions of the contract and the availability of funds, will authorize an incentive payment of 5 percent of the amount paid to the subcontractor. The Contracting Officer will seek funding in accordance with agency procedures.

(End of clause)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (AUG 1996)

(a) The Contractor shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.

(b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed under this contract, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Contractor has agreed to indemnify the Government.

(c) The Contractor agrees to include, and require inclusion of, this clause in all subcontracts at any tier for supplies or services (including construction and architect-engineer subcontracts and those for material, supplies, models, samples, or design or testing services) expected to exceed the simplified acquisition threshold at (FAR) 2.101.to exceed the dollar amount set forth in 13.000 of the Federal Acquisition Regulation (FAR).

(End of clause)

52.227-4 PATENT INDEMNITY--CONSTRUCTION CONTRACTS (APR 1984)

Except as otherwise provided, the Contractor agrees to indemnify the Government and its officers, agents, and employees against liability, including costs and expenses, for infringement upon any United States patent (except a patent issued upon an application that is now or may hereafter be withheld from issue pursuant to a Secrecy Order under 35 U.S.C. 181) arising out of performing this contract or out of the use or disposal by or for the account of the Government of supplies furnished or work performed under this contract.

52.227-5 WAIVER OF INDEMNITY (APR 1984)

Any provision or clause of this contract to the contrary notwithstanding, the Government hereby authorizes and consents to the use and manufacture, solely in performing this contract, of any invention covered by the United States patents identified below and waives indemnification by the Contractor with respect to such patents:

None.

52.228-2 ADDITIONAL BOND SECURITY (OCT 1997)

The Contractor shall promptly furnish additional security required to protect the Government and persons supplying labor or materials under this contract if--

(a) Any surety upon any bond, or issuing financial institution for other security, furnished with this contract becomes unacceptable to the Government.

(b) Any surety fails to furnish reports on its financial condition as required by the Government;

(c) The contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of the Contracting Officer; or

(d) An irrevocable letter of credit (ILC) used as security will expire before the end of the period of required security. If the Contractor does not furnish an acceptable extension or replacement ILC, or other acceptable substitute, at least 30 days before an ILC's scheduled expiration, the Contracting officer has the right to immediately draw on the ILC.

52.228-5 INSURANCE--WORK ON A GOVERNMENT INSTALLATION (JAN 1997)

(a) The Contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the kinds and minimum amounts of insurance required in the Schedule or elsewhere in the contract.

(b) Before commencing work under this contract, the Contractor shall notify the Contracting Officer in writing that the required insurance has been obtained. The policies evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the Government's interest shall not be effective (1) for such period as the laws of the State in which this contract is to be performed prescribe, or (2) until 30 days after the insurer or the Contractor gives written notice to the Contracting Officer, whichever period is longer.

(c) The Contractor shall insert the substance of this clause, including this paragraph (c), in subcontracts under this contract that require work on a Government installation and shall require subcontractors to provide and maintain the insurance required in the Schedule or elsewhere in the contract. The Contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the Contracting Officer upon request.

(End of clause)

52.228-11 PLEDGES OF ASSETS (FEB 1992)

(a) Offerors shall obtain from each person acting as an individual surety on a bid guarantee, a performance bond, or a payment bond--

(1) Pledge of assets; and

(2) Standard Form 28, Affidavit of Individual Surety.

(b) Pledges of assets from each person acting as an individual surety shall be in the form of--

(1) Evidence of an escrow account containing cash, certificates of deposit, commercial or Government securities, or other assets described in FAR 28.203-2 (except see 28.203-2(b)(2) with respect to Government securities held in book entry form) and/or;

(2) A recorded lien on real estate. The offeror will be required to provide--

(i) Evidence of title in the form of a certificate of title prepared by a title insurance company approved by the United States Department of Justice. This title evidence must show fee simple title vested in the surety along with any concurrent owners; whether any real estate taxes are due and payable; and any recorded encumbrances against the property, including the lien filed in favor of the Government as required by FAR 28.203-3(d);

(ii) Evidence of the amount due under any encumbrance shown in the evidence of title;

(iii) A copy of the current real estate tax assessment of the property or a current appraisal dated no earlier than 6 months prior to the date of the bond, prepared by a professional appraiser who certifies that the appraisal has been conducted in accordance with the generally accepted appraisal standards as reflected in the Uniform Standards of Professional Appraisal Practice, as promulgated by the Appraisal Foundation.

(End of clause)

52.228-12 PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS. (OCT 1995)

In accordance with Section 806(a)(3) of Pub. L. 102-190, as amended by Sections 2091 and 8105 of Pub. L. 103-355, upon the request of a prospective subcontractor or supplier offering to furnish labor or material for the

performance of this contract for which a payment bond has been furnished to the Government pursuant to the Miller Act, the Contractor shall promptly provide a copy of such payment bond to the requester.

52.228-14 IRREVOCABLE LETTER OF CREDIT (DEC 1999)

(a) "Irrevocable letter of credit" (ILC), as used in this clause, means a written commitment by a federally insured financial institution to pay all or part of a stated amount of money, until the expiration date of the letter, upon presentation by the Government (the beneficiary) of a written demand therefor. Neither the financial institution nor the offeror/Contractor can revoke or condition the letter of credit.

(b) If the offeror intends to use an ILC in lieu of a bid bond, or to secure other types of bonds such as performance and payment bonds, the letter of credit and letter of confirmation formats in paragraphs (e) and (f) of this clause shall be used.

(c) The letter of credit shall be irrevocable, shall require presentation of no document other than a written demand and the ILC (including confirming letter, if any), shall be issued/confirmed by an acceptable federally insured financial institution as provided in paragraph (d) of this clause, and--

(1) If used as a bid guarantee, the ILC shall expire no earlier than 60 days after the close of the bid acceptance period;

(2) If used as an alternative to corporate or individual sureties as security for a performance or payment bond, the offeror/Contractor may submit an ILC with an initial expiration date estimated to cover the entire period for which financial security is required or may submit an ILC with an initial expiration date that is a minimum period of one year from the date of issuance. The ILC shall provide that, unless the issuer provides the beneficiary written notice of non-renewal at least 60 days in advance of the current expiration date, the ILC is automatically extended without amendment for one year from the expiration date, or any future expiration date, until the period of required coverage is completed and the Contracting Officer provides the financial institution with a written statement waiving the right to payment. The period of required coverage shall be:

(i) For contracts subject to the Miller Act, the later of--

(A) One year following the expected date of final payment;

(B) For performance bonds only, until completion of any warranty period; or

(C) For payment bonds only, until resolution of all claims filed against the payment bond during the one-year period following final payment.

(ii) For contracts not subject to the Miller Act, the later of--

(A) 90 days following final payment; or

(B) For performance bonds only, until completion of any warranty period.

(d) Only federally insured financial institutions rated investment grade or higher shall issue or confirm the ILC. The offeror/Contractor shall provide the Contracting Officer a credit rating that indicates the financial institution has the required rating(s) as of the date of issuance of the ILC. Unless the financial institution issuing the ILC had letter of credit business of less than \$25 million in the past year, ILCs over \$5 million must be confirmed by another acceptable financial institution that had letter of credit business of less than \$25 million in the past year.

(e) The following format shall be used by the issuing financial institution to create an ILC:

[Issuing Financial Institution's Letterhead or Name and Address]

Issue Date _____

IRREVOCABLE LETTER OF CREDIT NO. _____

Account party's name _____

Account party's address _____

For Solicitation No. _____ (for reference only)

TO: [U.S. Government agency]

[U.S. Government agency's address]

1. We hereby establish this irrevocable and transferable Letter of Credit in your favor for one or more drawings up to United States \$ _____. This Letter of Credit is payable at [issuing financial institution's and, if any, confirming financial institution's] office at [issuing financial institution's address and, if any, confirming financial institution's address] and expires with our close of business on _____, or any automatically extended expiration date.

2. We hereby undertake to honor your or the transferee's sight draft(s) drawn on the issuing or, if any, the confirming financial institution, for all or any part of this credit if presented with this Letter of Credit and confirmation, if any, at the office specified in paragraph 1 of this Letter of Credit on or before the expiration date or any automatically extended expiration date.

3. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this Letter of Credit that it is deemed to be automatically extended without amendment for one year from the expiration date hereof, or any future expiration date, unless at least 60 days prior to any expiration date, we notify you or the transferee by registered mail, or other receipted means of delivery, that we elect not to consider this Letter of Credit renewed for any such additional period. At the time we notify you, we also agree to notify the account party (and confirming financial institution, if any) by the same means of delivery.

4. This Letter of Credit is transferable. Transfers and assignments of proceeds are to be effected without charge to either the beneficiary or the transferee/assignee of proceeds. Such transfer or assignment shall be only at the written direction of the Government (the beneficiary) in a form satisfactory to the issuing financial institution and the confirming financial institution, if any.

5. This Letter of Credit is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution, if any, otherwise state of issuing financial institution].

6. If this credit expires during an interruption of business of this financial institution as described in Article 17 of the UCP, the financial institution specifically agrees to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Issuing financial institution]

(f) The following format shall be used by the financial institution to confirm an ILC:

[Confirming Financial Institution's Letterhead or Name and Address]

(Date) _____

Our Letter of Credit Advice Number _____

Beneficiary: _____ [U.S. Government agency]

Issuing Financial Institution: _____

Issuing Financial Institution's LC No.: _____

Gentlemen:

1. We hereby confirm the above indicated Letter of Credit, the original of which is attached, issued by _____ [name of issuing financial institution] for drawings of up to United States dollars _____/U.S. \$ _____ and expiring with our close of business on _____ [the expiration date], or any automatically extended expiration date.

2. Draft(s) drawn under the Letter of Credit and this Confirmation are payable at our office located at _____.

3. We hereby undertake to honor sight draft(s) drawn under and presented with the Letter of Credit and this Confirmation at our offices as specified herein.

4. [This paragraph is omitted if used as a bid guarantee, and subsequent paragraphs are renumbered.] It is a condition of this confirmation that it be deemed automatically extended without amendment for one year from the expiration date hereof, or any automatically extended expiration date, unless:

(a) At least 60 days prior to any such expiration date, we shall notify the Contracting Officer, or the transferee and the issuing financial institution, by registered mail or other receipted means of delivery, that we elect not to consider this confirmation extended for any such additional period; or

(b) The issuing financial institution shall have exercised its right to notify you or the transferee, the account party, and ourselves, of its election not to extend the expiration date of the Letter of Credit.

5. This confirmation is subject to the Uniform Customs and Practice (UCP) for Documentary Credits, 1993 Revision, International Chamber of Commerce Publication No. 500, and to the extent not inconsistent therewith, to the laws of _____ [state of confirming financial institution].

6. If this confirmation expires during an interruption of business of this financial institution as described in Article 17 of the UCP, we specifically agree to effect payment if this credit is drawn against within 30 days after the resumption of our business.

Sincerely,

[Confirming financial institution]

(g) The following format shall be used by the Contracting Officer for a sight draft to draw on the Letter of Credit:

SIGHT DRAFT

[City, State]

(Date) _____

[Name and address of financial institution]

Pay to the order of _____ [Beneficiary Agency] _____ the sum of United States \$ _____.
This draft is drawn under Irrevocable Letter of Credit No. _____.

[Beneficiary Agency]

By: _____

(End of clause)

52.228-15 PERFORMANCE AND PAYMENT BONDS--CONSTRUCTION (JUL 2000)-

(a) Definitions. As used in this clause--

Original contract price means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) Amount of required bonds. Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) Performance bonds (Standard Form 25). The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) Payment Bonds (Standard Form 25-A). The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) Additional bond protection. (i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) Furnishing executed bonds. The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) Surety or other security for bonds. The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier's check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the Federal Register or may be obtained from the U.S. Department of Treasury, Financial Management Service, Surety Bond Branch, 401 14th Street, NW, 2nd Floor, West Wing, Washington, DC 20227.

(e) Notice of subcontractor waiver of protection (40 U.S.C. 270b(c)). Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of clause)

52.229-3 FEDERAL, STATE, AND LOCAL TAXES (JAN 1991)

(a) "Contract date," as used in this clause, means the date set for bid opening or, if this is a negotiated contract or a modification, the effective date of this contract or modification.

"All applicable Federal, State, and local taxes and duties," as used in this clause, means all taxes and duties, in effect on the contract date, that the taxing authority is imposing and collecting on the transactions or property covered by this contract.

"After-imposed Federal tax," as used in this clause, means any new or increased Federal excise tax or duty, or tax that was exempted or excluded on the contract date but whose exemption was later revoked or reduced during the contract period, on the transactions or property covered by this contract that the Contractor is required to pay or bear as the result of legislative, judicial, or administrative action taking effect after the contract date. It does not include social security tax or other employment taxes.

"After-relieved Federal tax," as used in this clause, means any amount of Federal excise tax or duty, except social security or other employment taxes, that would otherwise have been payable on the transactions or property covered by this contract, but which the Contractor is not required to pay or bear, or for which the Contractor obtains a refund or drawback, as the result of legislative, judicial, or administrative action taking effect after the contract date.

(b) The contract price includes all applicable Federal, State, and local taxes and duties.

(c) The contract price shall be increased by the amount of any after-imposed Federal tax, provided the Contractor warrants in writing that no amount for such newly imposed Federal excise tax or duty or rate increase was included in the contract price, as a contingency reserve or otherwise.

(d) The contract price shall be decreased by the amount of any after-relieved Federal tax.

(e) The contract price shall be decreased by the amount of any Federal excise tax or duty, except social security or other employment taxes, that the Contractor is required to pay or bear, or does not obtain a refund of, through the Contractor's fault, negligence, or failure to follow instructions of the Contracting Officer.

(f) No adjustment shall be made in the contract price under this clause unless the amount of the adjustment exceeds \$250.

(g) The Contractor shall promptly notify the Contracting Officer of all matters relating to any Federal excise tax or duty that reasonably may be expected to result in either an increase or decrease in the contract price and shall take appropriate action as the Contracting Officer directs.

(h) The Government shall, without liability, furnish evidence appropriate to establish exemption from any Federal, State, or local tax when the Contractor requests such evidence and a reasonable basis exists to sustain the exemption.

(End of clause)

52.232-5 PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS (MAY 1997)

(a) Payment of price. The Government shall pay the Contractor the contract price as provided in this contract.

(b) Progress payments. The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates of work accomplished which meets the

standards of quality established under the contract, as approved by the Contracting Officer.

(1) The Contractor's request for progress payments shall include the following substantiation:

(i) An itemization of the amounts requested, related to the various elements of work required by the contract covered by the payment requested.

(ii) A listing of the amount included for work performed by each subcontractor under the contract.

(iii) A listing of the total amount of each subcontract under the contract.

(iv) A listing of the amounts previously paid to each such subcontractor under the contract.

(v) Additional supporting data in a form and detail required by the Contracting Officer.

(2) In the preparation of estimates, the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration. Material delivered to the Contractor at locations other than the site also may be taken into consideration if--

(i) Consideration is specifically authorized by this contract; and

(ii) The Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

(c) Contractor certification. Along with each request for progress payments, the Contractor shall furnish the following certification, or payment shall not be made: (However, if the Contractor elects to delete paragraph (c)(4) from the certification, the certification is still acceptable.)

I hereby certify, to the best of my knowledge and belief, that--

(1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;

(2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements and the requirements of chapter 39 of Title 31, United States Code;

(3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract; and

(4) This certification is not to be construed as final acceptance of a subcontractor's performance.

(Name)

(Title)

(Date)

(d) Refund of unearned amounts. If the Contractor, after making a certified request for progress payments, discovers that a portion or all of such request constitutes a payment for performance by the Contractor that fails to conform to

the specifications, terms, and conditions of this contract (hereinafter referred to as the "unearned amount"), the Contractor shall--

(1) Notify the Contracting Officer of such performance deficiency; and

(2) Be obligated to pay the Government an amount (computed by the Contracting Officer in the manner provided in paragraph (j) of this clause) equal to interest on the unearned amount from the 8th day after the date of receipt of the unearned amount until--

(i) The date the Contractor notifies the Contracting Officer that the performance deficiency has been corrected; or

(ii) The date the Contractor reduces the amount of any subsequent certified request for progress payments by an amount equal to the unearned amount.

(e) Retainage. If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without retention of a percentage.

(f) Title, liability, and reservation of rights. All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but this shall not be construed as --

(1) Relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

(2) Waiving the right of the Government to require the fulfillment of all of the terms of the contract.

(g) Reimbursement for bond premiums. In making these progress payments, the Government shall, upon request, reimburse the Contractor for the amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after the Contractor has furnished evidence of full payment to the surety. The retainage provisions in paragraph (e) of this clause shall not apply to that portion of progress payments attributable to bond premiums.

(h) Final payment. The Government shall pay the amount due the Contractor under this contract after--

(1) Completion and acceptance of all work;

(2) Presentation of a properly executed voucher; and

(3) Presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned under the Assignment of Claims Act of 1940 (31 U.S.C. 3727 and 41 U.S.C. 15).

(i) Limitation because of undefinitized work. Notwithstanding any provision of this contract, progress payments shall not exceed 80 percent on work accomplished on undefinitized contract actions. A "contract action" is any action resulting in a contract, as defined in FAR Subpart 2.1, including contract modifications for additional supplies or services, but not including contract modifications that are within the scope and under the terms of the contract, such as contract modifications issued pursuant to the Changes clause, or funding and other administrative changes.

(j) Interest computation on unearned amounts. In accordance with 31 U.S.C. 3903(c)(1), the amount payable under subparagraph (d)(2) of this clause shall be--

(1) Computed at the rate of average bond equivalent rates of 91-day Treasury bills auctioned at the most recent auction of such bills prior to the date the Contractor receives the unearned amount; and

(2) Deducted from the next available payment to the Contractor.

52.232-17 INTEREST (JUNE 1996)

(a) Except as otherwise provided in this contract under a Price Reduction for Defective Cost or Pricing Data clause or a Cost Accounting Standards clause, all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code (26 U.S.C. 1481)) shall bear simple interest from the date due until paid unless paid within 30 days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (Public Law 95-563), which is applicable to the period in which the amount becomes due, as provided in paragraph (b) of this clause, and then at the rate applicable for each six-month period as fixed by the Secretary until the amount is paid. reproduce, prepare derivative works, distribute copies to the public, and (b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this contract.

(2) The date of the first written demand for payment consistent with this contract, including any demand resulting from a default termination.

(3) The date the Government transmits to the Contractor a proposed supplemental agreement to confirm completed negotiations establishing the amount of debt.

(4) If this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or a negotiated pricing agreement not confirmed by contract modification.

(c) The interest charge made under this clause may be reduced under the procedures prescribed in 32.614-2 of the Federal Acquisition Regulation in effect on the date of this contract.

52.232-23 ASSIGNMENT OF CLAIMS (JAN 1986)

(a) The Contractor, under the Assignment of Claims Act, as amended, 31 U.S.C. 3727, 41 U.S.C. 15 (hereafter referred to as "the Act"), may assign its rights to be paid amounts due or to become due as a result of the performance of this contract to a bank, trust company, or other financing institution, including any Federal lending agency. The assignee under such an assignment may thereafter further assign or reassign its right under the original assignment to any type of financing institution described in the preceding sentence.

(b) Any assignment or reassignment authorized under the Act and this clause shall cover all unpaid amounts payable under this contract, and shall not be made to more than one party, except that an assignment or reassignment may be made to one party as agent or trustee for two or more parties participating in the financing of this contract.

(c) The Contractor shall not furnish or disclose to any assignee under this contract any classified document (including this contract) or information related to work under this contract until the Contracting Officer authorizes such action in writing.

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (JUN 1997)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in section 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see subparagraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments. (1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project:

(A) The due date for making such payments shall be 14 days after receipt of the payment request by the designated billing office. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date shall be the 14th day after the date of the Contractor's payment request, provided a proper payment request is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, shall be as specified in the contract or, if not specified, 30 days after approval for release to the Contractor by the Contracting Officer.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract):

(A) The due date for making such payments shall be either the 30th day after receipt by the designated billing office of a proper invoice from the Contractor, or the 30th day after Government acceptance of the work or services completed by the Contractor, whichever is later. If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date shall be the 30th day after the date of the Contractor's invoice, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) On a final invoice where the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance shall be deemed to have occurred on the effective date of the contract settlement.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(2)(i) through (a)(2)(ix) of this clause. If the invoice does not comply with these requirements, it shall be returned within 7 days after the date the designated billing office received the invoice, with a statement of the reasons why it is not a proper invoice. Untimely notification will be taken into account in computing any interest penalty owed the Contractor in the manner described in subparagraph (a)(4) of this clause.

(i) Name and address of the Contractor.

(ii) Invoice date. (The Contractor is encouraged to date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., prompt payment discount terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to be notified in the event of a defective invoice.

(viii) For payments described in subdivision (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Any other information or documentation required by the contract.

(x) While not required, the Contractor is strongly encouraged to assign an identification number to each invoice.

(3) Interest penalty. An interest penalty shall be paid automatically by the designated payment office, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday when Federal Government offices are closed and Government business is not expected to be conducted, payment may be made on the following business day without incurring a late payment interest penalty.

(i) A proper invoice was received by the designated billing office.

(ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The interest penalty shall be at the rate established by the Secretary of the Treasury under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority (e.g., tariffs). This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice principal payment amount approved by the Government until the payment date of such approved principal amount; and will be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice principal payment amount and will be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in subparagraph (a)(2) of this clause, the due date on the corrected invoice will be adjusted by subtracting from such date the number of days taken beyond the prescribed notification of defects period. Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in subdivision (a)(1)(ii) of this clause, Government acceptance or approval shall be deemed to have occurred constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. In the event that actual acceptance or approval occurs within the constructive acceptance or approval period, the determination of an interest penalty shall be based on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do

not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days.

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(C) For incorrect electronic funds transfer (EFT) information, in accordance with the EFT clause of this contract.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(5) Prompt payment discounts. An interest penalty also shall be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(6) Additional interest penalty. (i) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with subdivision (a)(6)(iii) of this clause, shall be paid in addition to the interest penalty amount if the Contractor--

(A) Is owed an interest penalty of \$1 or more;

(B) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and

(C) Makes a written demand to the designated payment office for additional penalty payment, in accordance with subdivision (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) Contractors shall support written demands for additional penalty payments with the following data. No additional data shall be required. Contractors shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) Demands must be postmarked on or before the 40th day after payment was made, except that--

(1) If the postmark is illegible or nonexistent, the demand must have been received and annotated with the date of receipt by the designated payment office on or before the 40th day after payment was made; or

(2) If the postmark is illegible or nonexistent and the designated payment office fails to make the required annotation, the demand's validity will be determined by the date the Contractor has placed on the demand; provided such date is no later than the 40th day after payment was made.

(iii)(A) The additional penalty shall be equal to 100 percent of any original late payment interest penalty, except--

(1) The additional penalty shall not exceed \$5,000;

(2) The additional penalty shall never be less than \$25; and

(3) No additional penalty is owed if the amount of the underlying interest penalty is less than \$1.

(B) If the interest penalty ceases to accrue in accordance with the limits stated in subdivision (a)(4)(iii) of this clause, the amount of the additional penalty shall be calculated on the amount of interest penalty that would have accrued in the absence of these limits, subject to the overall limits on the additional penalty specified in subdivision (a)(6)(iii)(A) of this clause.

(C) For determining the maximum and minimum additional penalties, the test shall be the interest penalty due on each separate payment made for each separate contract. The maximum and minimum additional penalty shall not be based upon individual invoices unless the invoices are paid separately. Where payments are consolidated for disbursing purposes, the maximum and minimum additional penalty determination shall be made separately for each contract therein.

(D) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payments. (1) Due dates for recurring financing payments. If this contract provides for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the [insert day as prescribed by Agency head; if not prescribed, insert 30th day] day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(2) Due dates for other contract financing. For advance payments, loans, or other arrangements that do not involve recurring submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(3) Interest penalty not applicable. Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to include a payment clause and an interest penalty clause conforming to the standards set forth in subparagraphs (c)(1) and (c)(2) of this clause in each of its subcontracts, and to require each of its subcontractors to include such clauses in their subcontracts with each

lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) A copy of any notice issued by a Contractor pursuant to subdivision (d)(3)(i) of this clause has been furnished to the Contracting Officer.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to subparagraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under subparagraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under subdivision (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

- (i) Reduction of the amount of any subsequent certified application for payment; or
- (ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--
 - (A) The amounts withheld under subparagraph (e)(1) of this clause; and
 - (B) The dates that such withholding began and ended; and
- (6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--
 - (i) The day the identified subcontractor performance deficiency is corrected; or
 - (ii) The date that any subsequent payment is reduced under subdivision (e)(5)(i) of this clause.
- (f) Third-party deficiency reports. (1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under subparagraph (e)(6) of this clause--
 - (i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and
 - (ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under subdivision (f)(1)(i) of this clause.
- (2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--
 - (i) Pay the amount withheld under subdivision (f)(1)(ii) of this clause to such first-tier subcontractor; or
 - (ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.
- (g) Written notice of subcontractor withholding. A written notice of any withholding shall be issued to a subcontractor (with a copy to the Contracting Officer of any such notice issued by the Contractor), specifying--
 - (1) The amount to be withheld;
 - (2) The specific causes for the withholding under the terms of the subcontract; and
 - (3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.
- (h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.
- (i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or

entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the United States is a party. The United States may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the United States for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

52.232-33 PAYMENT BY ELECTRONIC FUNDS TRANSFER—CENTRAL CONTRACTOR REGISTRATION (MAY 1999)

(a) Method of payment. (1) All payments by the Government under this contract shall be made by electronic funds transfer (EFT), except as provided in paragraph (a)(2) of this clause. As used in this clause, the term "EFT" refers to the funds transfer and may also include the payment information transfer.

(2) In the event the Government is unable to release one or more payments by EFT, the Contractor agrees to either--

(i) Accept payment by check or some other mutually agreeable method of payment; or

(ii) Request the Government to extend the payment due date until such time as the Government can make payment by EFT (but see paragraph (d) of this clause).

(b) Contractor's EFT information. The Government shall make payment to the Contractor using the EFT information contained in the Central Contractor Registration (CCR) database. In the event that the EFT information changes, the Contractor shall be responsible for providing the updated information to the CCR database.

(c) Mechanisms for EFT payment. The Government may make payment by EFT through either the Automated Clearing House (ACH) network, subject to the rules of the National Automated Clearing House Association, or the Fedwire Transfer System. The rules governing Federal payments through the ACH are contained in 31 CFR part 210.

(d) Suspension of payment. If the Contractor's EFT information in the CCR database is incorrect, then the Government need not make payment to the Contractor under this contract until correct EFT information is entered into the CCR database; and any invoice or contract financing request shall be deemed not to be a proper invoice for the purpose of prompt payment under this contract. The prompt payment terms of the contract regarding notice of an improper invoice and delays in accrual of interest penalties apply.

(e) Contractor EFT arrangements. If the Contractor has identified multiple payment receiving points (i.e., more than one remittance address and/or EFT information set) in the CCR database, and the Contractor has not notified the Government of the payment receiving point applicable to this contract, the Government shall make payment to the first payment receiving point (EFT information set or remittance address as applicable) listed in the CCR database.

(f) Liability for uncompleted or erroneous transfers. (1) If an uncompleted or erroneous transfer occurs because the Government used the Contractor's EFT information incorrectly, the Government remains responsible for--

(i) Making a correct payment;

(ii) Paying any prompt payment penalty due; and

(iii) Recovering any erroneously directed funds.

(2) If an uncompleted or erroneous transfer occurs because the Contractor's EFT information was incorrect, or was revised within 30 days of Government release of the EFT payment transaction instruction to the Federal Reserve System, and--

(i) If the funds are no longer under the control of the payment office, the Government is deemed to have made payment and the Contractor is responsible for recovery of any erroneously directed funds; or

(ii) If the funds remain under the control of the payment office, the Government shall not make payment, and the provisions of paragraph (d) of this clause shall apply.

(g) EFT and prompt payment. A payment shall be deemed to have been made in a timely manner in accordance with the prompt payment terms of this contract if, in the EFT payment transaction instruction released to the Federal Reserve System, the date specified for settlement of the payment is on or before the prompt payment due date, provided the specified payment date is a valid date under the rules of the Federal Reserve System.

(h) EFT and assignment of claims. If the Contractor assigns the proceeds of this contract as provided for in the assignment of claims terms of this contract, the Contractor shall require as a condition of any such assignment, that the assignee shall register in the CCR database and shall be paid by EFT in accordance with the terms of this clause. In all respects, the requirements of this clause shall apply to the assignee as if it were the Contractor. EFT information that shows the ultimate recipient of the transfer to be other than the Contractor, in the absence of a proper assignment of claims acceptable to the Government, is incorrect EFT information within the meaning of paragraph (d) of this clause.

(i) Liability for change of EFT information by financial agent. The Government is not liable for errors resulting from changes to EFT information made by the Contractor's financial agent.

(j) Payment information. The payment or disbursing office shall forward to the Contractor available payment information that is suitable for transmission as of the date of release of the EFT instruction to the Federal Reserve System. The Government may request the Contractor to designate a desired format and method(s) for delivery of payment information from a list of formats and methods the payment office is capable of executing. However, the Government does not guarantee that any particular format or method of delivery is available at any particular payment office and retains the latitude to use the format and delivery method most convenient to the Government. If the Government makes payment by check in accordance with paragraph (a) of this clause, the Government shall mail the payment information to the remittance address contained in the CCR database.

(End of Clause)

52.233-1 DISPUTES. (DEC 1998)

(a) This contract is subject to the Contract Disputes Act of 1978, as amended (41 U.S.C. 601-613).

(b) Except as provided in the Act, all disputes arising under or relating to this contract shall be resolved under this clause.

(c) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the Contractor seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by subparagraph (d)(2) of this clause. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim under the Act. The submission may be converted to a claim under the Act, by complying with the submission and certification requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

(d)(1) A claim by the Contractor shall be made in writing and, unless otherwise stated in this contract, submitted within 6 years after accrual of the claim to the Contracting Officer for a written decision. A claim by the Government against the Contractor shall be subject to a written decision by the Contracting Officer.

(2)(i) The contractors shall provide the certification specified in subparagraph (d)(2)(iii) of this clause when submitting any claim -

(A) Exceeding \$100,000; or

(B) Regardless of the amount claimed, when using -

(1) Arbitration conducted pursuant to 5 U.S.C. 575-580; or

(2) Any other alternative means of dispute resolution (ADR) technique that the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA).

(ii) The certification requirement does not apply to issues in controversy that have not been submitted as all or part of a claim.

(iii) The certification shall state as follows: "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.

(3) The certification may be executed by any person duly authorized to bind the Contractor with respect to the claim.

(e) For Contractor claims of \$100,000 or less, the Contracting Officer must, if requested in writing by the Contractor, render a decision within 60 days of the request. For Contractor-certified claims over \$100,000, the Contracting Officer must, within 60 days, decide the claim or notify the Contractor of the date by which the decision will be made.

(f) The Contracting Officer's decision shall be final unless the Contractor appeals or files a suit as provided in the Act.

(g) If the claim by the Contractor is submitted to the Contracting Officer or a claim by the Government is presented to the Contractor, the parties, by mutual consent, may agree to use alternative dispute resolution (ADR). If the Contractor refuses an offer for ADR, the Contractor shall inform the Contracting Officer, in writing, of the Contractor's specific reasons for rejecting the request.

(h) The Government shall pay interest on the amount found due and unpaid from (1) the date the Contracting Officer receives the claim (certified, if required); or (2) the date that payment otherwise would be due, if that date is later, until the date of payment. With regard to claims having defective certifications, as defined in (FAR) 48 CFR 33.201, interest shall be paid from the date that the Contracting Officer initially receives the claim. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Contracting Officer receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

(i) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer.

(End of clause)

52.233-3 PROTEST AFTER AWARD (AUG. 1996)

(a) Upon receipt of a notice of protest (as defined in FAR 33.101) or a determination that a protest is likely (see FAR 33.102(d)), the Contracting Officer may, by written order to the Contractor, direct the Contractor to stop performance of the work called for by this contract. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Upon receipt of the final decision in the protest, the Contracting Officer shall either--

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.

(b) If a stop-work order issued under this clause is canceled either before or after a final decision in the protest, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if--

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to an adjustment within 30 days after the end of the period of work stoppage; provided, that if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

(e) The Government's rights to terminate this contract at any time are not affected by action taken under this clause.

(f) If, as the result of the Contractor's intentional or negligent misstatement, misrepresentation, or miscertification, a protest related to this contract is sustained, and the Government pays costs, as provided in FAR 33.102(b)(2) or 33.104(h)(1), the Government may require the Contractor to reimburse the Government the amount of such costs. In addition to any other remedy available, and pursuant to the requirements of Subpart 32.6, the Government may collect this debt by offsetting the amount against any payment due the Contractor under any contract between the Contractor and the Government.

52.236-2 DIFFERING SITE CONDITIONS (APR 1984)

As prescribed in 36.502, insert the following clause in solicitations and contracts when a fixed-price construction contract or a fixed-price dismantling, demolition, or removal of improvements contract is contemplated and the contract amount is expected to exceed the small purchase limitation. The Contracting Officer may insert the clause in solicitations and contracts when a fixed-price construction or a fixed-price contract for dismantling, demolition, or removal of improvements is contemplated and the contract amount is expected to be within the small purchase limitation.

(a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of

(1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

(2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

(b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and the contract modified in writing accordingly.

(c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.

(d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

52.236-3 SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (APR 1984)

(a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to

(1) conditions bearing upon transportation, disposal, handling, and storage of materials;

(2) the availability of labor, water, electric power, and roads;

(3) uncertainties of weather, river stages, tides, or similar physical conditions at the site;

(4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Government, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the Government.

(b) The Government assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the Government. Nor does the Government assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

52.236-5 MATERIAL AND WORKMANSHIP (APR 1984)

(a) All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

(b) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the

material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this contract shall be performed in a skillful and workmanlike manner. The Contracting Officer may require, in writing, that the Contractor remove from the work any employee the Contracting Officer deems incompetent, careless, or otherwise objectionable.

52.236-6 SUPERINTENDENCE BY THE CONTRACTOR (APR 1984)

At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.

52.236-7 PERMITS AND RESPONSIBILITIES (NOV 1991)

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.

52.236-8 OTHER CONTRACTS (APR 1984)

The Government may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with Government employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by Government employees.

52.236-9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (APR 1984)

(a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.

(b) The Contractor shall protect from damage all existing improvements and utilities

(1) at or near the work site, and

(2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting

Officer may have the necessary work performed and charge the cost to the Contractor.

52.236-10 OPERATIONS AND STORAGE AREAS (APR 1984)

(a) The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the Contracting Officer. The Contractor shall hold and save the Government, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.

(b) Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.

(c) The Contractor shall, under regulations prescribed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

52.236-11 USE AND POSSESSION PRIOR TO COMPLETION (APR 1984)

(a) The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

(b) While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

52.236-12 CLEANING UP (APR 1984)

The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer.

52.236-13 ACCIDENT PREVENTION (NOV 1991)

(a) The Contractor shall provide and maintain work environments and procedures which will

(1) safeguard the public and Government personnel, property, materials, supplies, and equipment exposed to Contractor operations and activities;

(2) avoid interruptions of Government operations and delays in project completion dates; and

(3) control costs in the performance of this contract.

(b) For these purposes on contracts for construction or dismantling, demolition, or removal of improvements, the Contractor shall-

(1) Provide appropriate safety barricades, signs, and signal lights;

(2) Comply with the standards issued by the Secretary of Labor at 29 CFR Part 1926 and 29 CFR Part 1910; and

(3) Ensure that any additional measures the Contracting Officer determines to be reasonably necessary for the purposes are taken.

(c) If this contract is for construction or dismantling, demolition or removal of improvements with any Department of Defense agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation.

(d) Whenever the Contracting Officer becomes aware of any noncompliance with these requirements or any condition which poses a serious or imminent danger to the health or safety of the public or Government personnel, the Contracting Officer shall notify the Contractor orally, with written confirmation, and request immediate initiation of corrective action. This notice, when delivered to the Contractor or the Contractor's representative at the work site, shall be deemed sufficient notice of the noncompliance and that corrective action is required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not be entitled to any equitable adjustment of the contract price or extension of the performance schedule on any stop work order issued under this clause.

(e) The Contractor shall insert this clause, including this paragraph (e), with appropriate changes in the designation of the parties, in subcontracts.

52.236-15 SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984)

(a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

(b) The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

(c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

52.236-17 LAYOUT OF WORK (APR 1984)

The Contractor shall lay out its work from Government established base lines and bench marks indicated on the drawings, and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. The Contractor shall be responsible for executing the work to the lines and grades that may be established or indicated by the Contracting Officer. The Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by the Contracting Officer until authorized to remove them. If such marks are destroyed by the Contractor or through its negligence before their removal is authorized, the Contracting Officer may replace them and deduct the expense of the replacement from any amounts due or to become due to the Contractor.

52.236-21 SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997)

(a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

(b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by," or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.

(c) Where "as shown," "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place," that is "furnished and installed".

(d) Shop drawings means drawings, submitted to the Government by the Contractor, subcontractor, or any lower tier subcontractor pursuant to a construction contract, showing in detail (1) the proposed fabrication and assembly of structural elements, and (2) the installation (i.e., fit, and attachment details) of materials or equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefor. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

(f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such

variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

(g) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the Contracting Officer and one set will be returned to the Contractor.

52.236-26 PRECONSTRUCTION CONFERENCE (FEB 1995)

If the Contracting Officer decides to conduct a preconstruction conference, the successful offeror will be notified and will be required to attend. The Contracting Officer's notification will include specific details regarding the date, time, and location of the conference, any need for attendance by subcontractors, and information regarding the items to be discussed.

52.242-13 BANKRUPTCY (JUL 1995)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the contract, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

(End of clause)

52.242-14 SUSPENSION OF WORK (APR 1984)

(a) The Contracting Officer may order the Contractor, in writing, to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government.

(b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a reasonable time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the unreasonable suspension, delay, or interruption, and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor, or for which an equitable adjustment is provided for or excluded under any other term or condition of this contract. (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

52.243-4 CHANGES (AUG 1987)

(a) The Contracting Officer may, at any time, without notice to the sureties, if any, by written order designated or

indicated to be a change order, make changes in the work within the general scope of the contract, including changes --

- (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) In the Government-furnished facilities, equipment, materials, services, or site; or
 - (4) Directing acceleration in the performance of the work.
- (b) Any other written or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating
- (1) the date, circumstances, and source of the order and
 - (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement, or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for an adjustment based on defective specifications, no adjustment for any change under paragraph (b) of this clause shall be made for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after
- (1) receipt of a written change order under paragraph (a) of this clause or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting to the Contracting Officer a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (b) above.
- (f) No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

52.245-4 GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) (APR 1984)

- (a) The Government shall deliver to the Contractor, at the time and locations stated in this contract, the Government-furnished property described in the Schedule or specifications. If that property, suitable for its intended use, is not delivered to the Contractor, the Contracting Officer shall equitably adjust affected provisions of this contract in accordance with the Changes clause when--
- (1) The Contractor submits a timely written request for an equitable adjustment; and
 - (2) The facts warrant an equitable adjustment.
- (b) Title to Government-furnished property shall remain in the Government. The Contractor shall use the Government-furnished property only in connection with this contract. The Contractor shall maintain adequate property control records in accordance with sound industrial practice and will make such records available for Government inspection at all reasonable times, unless the clause at Federal Acquisition Regulation 52.245-1,

Property Records, is included in this contract.

(c) Upon delivery of Government-furnished property to the Contractor, the Contractor assumes the risk and responsibility for its loss or damage, except--

(1) For reasonable wear and tear;

(2) To the extent property is consumed in performing this contract; or

(3) As otherwise provided for by the provisions of this contract.

(d) Upon completing this contract, the Contractor shall follow the instructions of the Contracting Officer regarding the disposition of all Government-furnished property not consumed in performing this contract or previously delivered to the Government. The Contractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property, as may be directed or authorized by the Contracting Officer. The net proceeds of any such disposal shall be credited to the contract price or shall be paid to the Government as directed by the Contracting Officer.

(e) If this contract is to be performed outside the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (wherever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

52.246-12 INSPECTION OF CONSTRUCTION (AUG 1996)

(a) Definition. "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) Government inspections and tests are for the sole benefit of the Government and do not--

(1) Relieve the Contractor of responsibility for providing adequate quality control measures;

(2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

(3) Constitute or imply acceptance; or

(4) Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) of this section.

(d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Contracting Officer's written authorization.

(e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The Government may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

(f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(g) If the Contractor does not promptly replace or correct rejected work, the Government may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor or (2) terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(i) Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

52.246-21 WARRANTY OF CONSTRUCTION (MAR 1994)

(a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.

(b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If the Government takes possession of any part of the work before final acceptance, this warranty shall continue for a period of 1 year from the date the Government takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Government-owned or controlled real or personal property, when that damage is the result of--

(1) The Contractor's failure to conform to contract requirements; or

(2) Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.

(e) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Government shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall--

(1) Obtain all warranties that would be given in normal commercial practice;

(2) Require all warranties to be executed, in writing, for the benefit of the Government, if directed by the Contracting Officer; and

(3) Enforce all warranties for the benefit of the Government, if directed by the Contracting Officer.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Government may bring suit at its expense to enforce a subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Government nor for the repair of any damage that results from any defect in Government-furnished material or design.

(j) This warranty shall not limit the Government's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

(End of clause)

52.248-3 VALUE ENGINEERING--CONSTRUCTION (FEB 2000)

(a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP's, in accordance with paragraph (f) below.

(b) Definitions. "Collateral costs," as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

"Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that--

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change--

(i) In deliverable end item quantities only; or

(ii) To the contract type only.

(c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) Submission. The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) Government action.

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.

If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.

(f) Sharing.

(1) Rates. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by

(i) 45 percent for fixed-price contracts or

(ii) 75 percent for cost-reimbursement contracts.

(2) Payment. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to--

(i) Accept the VECP;

(ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and

(iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering-- Construction clause of contract, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations." If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.249-2 TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SEP 1996) - ALTERNATE I (SEP 1996)

(a) The Government may terminate performance of work under this contract in whole or, from time to time, in part if the Contracting Officer determines that a termination is in the Government's interest. The Contracting Officer shall terminate by delivering to the Contractor a Notice of Termination specifying the extent of termination and the effective date.

(b) After receipt of a Notice of Termination, and except as directed by the Contracting Officer, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under this clause:

(1) Stop work as specified in the notice.

(2) Place no further subcontracts or orders (referred to as subcontracts in this clause) for materials, services, or facilities, except as necessary to complete the continued portion of the contract.

(3) Terminate all subcontracts to the extent they relate to the work terminated.

(4) Assign to the Government, as directed by the Contracting Officer, all right, title, and interest of the Contractor under the subcontracts terminated, in which case the Government shall have the right to settle or to pay any termination settlement proposal arising out of those terminations.

(5) With approval or ratification to the extent required by the Contracting Officer, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts; the approval or ratification will be final for purposes of this clause.

(6) As directed by the Contracting Officer, transfer title and deliver to the Government (i) the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the work terminated, and (ii) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Government.

(7) Complete performance of the work not terminated.

(8) Take any action that may be necessary, or that the Contracting Officer may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Government has or may acquire an interest.

(9) Use its best efforts to sell, as directed or authorized by the Contracting Officer, any property of the types referred to in subparagraph (b)(6) of this clause; provided, however, that the Contractor (i) is not required to extend credit to any purchaser and (ii) may acquire the property under the conditions prescribed by, and at prices approved by, the Contracting Officer. The proceeds of any transfer or disposition will be applied to reduce any payments to be made by the Government under this contract, credited to the price or cost of the work, or paid in any other manner directed by the Contracting Officer.

(c) The Contractor shall submit complete termination inventory schedules no later than 120 days from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 120-day period.

(d) After expiration of the plant clearance period as defined in Subpart 45.6 of the Federal Acquisition Regulation, the Contractor may submit to the Contracting Officer a list, certified as to quantity and quality, of termination inventory not previously disposed of, excluding items authorized for disposition by the Contracting Officer. The Contractor may request the Government to remove those items or enter into an agreement for their storage. Within 15 days, the Government will accept title to those items and remove them or enter into a storage agreement. The Contracting Officer may verify the list upon removal of the items, or if stored, within 45 days from submission of the list, and shall correct the list, as necessary, before final settlement.

(e) After termination, the Contractor shall submit a final termination settlement proposal to the Contracting Officer in the form and with the certification prescribed by the Contracting Officer. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by the Contracting Officer upon written request of the Contractor within this 1-year period. However, if the Contracting Officer determines that the facts justify it, a termination settlement proposal may be received and acted on after 1 year or any extension. If the Contractor fails to submit the proposal within the time allowed, the Contracting Officer

may determine, on the basis of information available, the amount, if any, due the Contractor because of the termination and shall pay the amount determined.

(f) Subject to paragraph (e) of this clause, the Contractor and the Contracting Officer may agree upon the whole or any part of the amount to be paid or remaining to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. However, the agreed amount, whether under this paragraph (g) or paragraph (g) of this clause, exclusive of costs shown in subparagraph (g)(3) of this clause, may not exceed the total contract price as reduced by (1) the amount of payments previously made and (2) the contract price of work not terminated. The contract shall be modified, and the Contractor paid the agreed amount. Paragraph (g) of this clause shall not limit, restrict, or affect the amount that may be agreed upon to be paid under this paragraph.

(g) If the Contractor and Contracting Officer fail to agree on the whole amount to be paid the Contractor because of the termination of work, the Contracting Officer shall pay the Contractor the amounts determined as follows, but without duplication of any amounts agreed upon under paragraph (f) of this clause:

(1) For contract work performed before the effective date of termination, the total (without duplication of any items) of--

(i) The cost of this work;

(ii) The cost of settling and paying termination settlement proposals under terminated subcontracts that are properly chargeable to the terminated portion of the contract if not included in subdivision (g)(1)(i) of this clause; and

(iii) A sum, as profit on subdivision (g)(1)(i) of this clause, determined by the Contracting Officer under 49.202 of the Federal Acquisition Regulation, in effect on the date of this contract, to be fair and reasonable; however, if it appears that the Contractor would have sustained a loss on the entire contract had it been completed, the Contracting Officer shall allow no profit under this subdivision (iii) and shall reduce the settlement to reflect the indicated rate of loss.

(2) The reasonable costs of settlement of the work terminated, including--

(i) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement proposals and supporting data;

(ii) The termination and settlement of subcontracts (excluding the amounts of such settlements); and

(iii) Storage, transportation, and other costs incurred, reasonably necessary for the preservation, protection, or disposition of the termination inventory.

(h) Except for normal spoilage, and except to the extent that the Government expressly assumed the risk of loss, the Contracting Officer shall exclude from the amounts payable to the Contractor under paragraph (g) of this clause, the fair value, as determined by the Contracting Officer, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Government or to a buyer.

(i) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation, in effect on the date of this contract, shall govern all costs claimed, agreed to, or determined under this clause.

(j) The Contractor shall have the right of appeal, under the Disputes clause, from any determination made by the Contracting Officer under paragraph (e), (g), or (l) of this clause, except that if the Contractor failed to submit the termination settlement proposal or request for equitable adjustment within the time provided in paragraph (e) or (l), respectively, and failed to request a time extension, there is no right of appeal.

(k) In arriving at the amount due the Contractor under this clause, there shall be deducted--

(1) All unliquidated advance or other payments to the Contractor under the terminated portion of this contract;

(2) Any claim which the Government has against the Contractor under this contract; and

(3) The agreed price for, or the proceeds of sale of, materials, supplies, or other things acquired by the Contractor or sold under the provisions of this clause and not recovered by or credited to the Government.

(l) If the termination is partial, the Contractor may file a proposal with the Contracting Officer for an equitable adjustment of the price(s) of the continued portion of the contract. The Contracting Officer shall make any equitable adjustment agreed upon. Any proposal by the Contractor for an equitable adjustment under this clause shall be requested within 90 days from the effective date of termination unless extended in writing by the Contracting Officer.

(m)(1) The Government may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the Contractor for the terminated portion of the contract, if the Contracting Officer believes the total of these payments will not exceed the amount to which the Contractor will be entitled.

(2) If the total payments exceed the amount finally determined to be due, the Contractor shall repay the excess to the Government upon demand, together with interest computed at the rate established by the Secretary of the Treasury under 50 U.S.C. App. 1215(b)(2). Interest shall be computed for the period from the date the excess payment is received by the Contractor to the date the excess is repaid. Interest shall not be charged on any excess payment due to a reduction in the Contractor's termination settlement proposal because of retention or other disposition of termination inventory until 10 days after the date of the retention or disposition, or a later date determined by the Contracting Officer because of the circumstances.

(n) Unless otherwise provided in this contract or by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this contract for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this contract. The Contractor shall make these records and documents available to the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by the Contracting Officer, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

52.249-10 DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984)

(a) If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will insure its completion within the time specified in this contract including any extension, or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separable part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

(b) The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if--

(1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include

(i) acts of God or of the public enemy,

(ii) acts of the Government in either its sovereign or contractual capacity,

(iii) acts of another Contractor in the performance of a contract with the Government,

(iv) fires,

(v) floods,

(vi) epidemics,

(vii) quarantine restrictions,

(viii) strikes,

(ix) freight embargoes,

(x) unusually severe weather, or delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

(2) The Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

(c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

52.253-1 COMPUTER GENERATED FORMS (JAN 1991)

(a) Any data required to be submitted on a Standard or Optional Form prescribed by the Federal Acquisition Regulation (FAR) may be submitted on a computer generated version of the form, provided there is no change to the name, content, or sequence of the data elements on the form, and provided the form carries the Standard or Optional Form number and edition date.

(b) Unless prohibited by agency regulations, any data required to be submitted on an agency unique form prescribed by an agency supplement to the FAR may be submitted on a computer generated version of the form provided there is no change to the name, content, or sequence of the data elements on the form and provided the form carries the agency form number and edition date.

(c) If the Contractor submits a computer generated version of a form that is different than the required form, then the rights and obligations of the parties will be determined based on the content of the required form.

252.201-7000 CONTRACTING OFFICER'S REPRESENTATIVE (DEC 1991)

(a) "Definition. Contracting officer's representative" means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

(End of clause)

252.203-7001 PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT -
RELATED FELONIES (MAR 1999)

(a) Definitions. As used in this clause—

(1) “Arising out of a contract with the DoD” means any act in connection with—

(i) Attempting to obtain;

(ii) Obtaining, or

(iii) Performing a contract or first-tier subcontract of any agency, department, or component of the Department of Defense (DoD).

(2) “Conviction of fraud or any other felony” means any conviction for fraud or a felony in violation of state or Federal criminal statutes, whether entered on a verdict or plea, including a plea of *nolo contendere*, for which sentence has been imposed.

(3) “Date of conviction” means the date judgment was entered against the individual.

(b) Any individual who is convicted after September 29, 1988, of fraud or any other felony arising out of a contract with the DoD is prohibited from serving--

(1) In a management or supervisory capacity on any DoD contract or first-tier subcontract;

(2) On the board of directors of any DoD contractor or first-tier subcontractor;

(3) As a consultant, agent, or representative for any DoD contractor or first-tier subcontractor; or

(4) In any other capacity with the authority to influence, advise, or control the decisions of any DoD contractor or subcontractor with regard to any DoD contract or first-tier subcontract.

(c) Unless waived, the prohibition in paragraph (b) of this clause applies for not less than 5 years from the date of conviction.

(d) 10 U.S.C. 2408 provides that a defense contractor or first-tier subcontractor shall be subject to a criminal penalty of not more than \$500,000 if convicted of knowingly—

(1) Employing a person under a prohibition specified in paragraph (b) of this clause; or

(2) Allowing such a person to serve on the board of directors of the contractor or first-tier subcontractor.

(e) In addition to the criminal penalties contained in 10 U.S.C. 2408, the Government may consider other available remedies, such as—

(1) Suspension or debarment;

(2) Cancellation of the contract at no cost to the Government; or

(3) Termination of the contract for default.

(f) The Contractor may submit written requests for waiver of the prohibition in paragraph (b) of this clause to the Contracting Officer. Requests shall clearly identify—

- (1) The person involved;
- (2) The nature of the conviction and resultant sentence or punishment imposed;
- (3) The reasons for the requested waiver; and
- (4) An explanation of why a waiver is in the interest of national security.

(g) The Contractor agrees to include the substance of this clause, appropriately modified to reflect the identity and relationship of the parties, in all first-tier subcontracts exceeding the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation, except those for commercial items or components.

(h) Pursuant to 10 U.S.C. 2408(c), defense contractors and subcontractors may obtain information as to whether a particular person has been convicted of fraud or any other felony arising out of a contract with the DoD by contacting The Office of Justice Programs, The Denial of Federal Benefits Office, U.S. Department of Justice, telephone (202) 616-3507.

(End of clause)

252.204-7003 CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT (APR 1992)

The Contractor's procedures for protecting against unauthorized disclosure of information shall not require Department of Defense employees or members of the Armed Forces to relinquish control of their work products, whether classified or not, to the contractor.

(End of clause)

252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION.(MAR 2000)

(a) Definitions.

As used in this clause--

(1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.

(2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.

(3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.

(4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

(b)(1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract

resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.

(2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.

(3) Lack of registration in the CCR database will make an offeror ineligible for award.

(4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

(c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.

(d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr2000.com>.

(End of clause)

252.205-7000 PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS (DEC 1991)

(a) Definition.

"Cooperative agreement holder" means a State or local government; a private, nonprofit organization; a tribal organization (as defined in section 4(c) of the Indian Self-Determination and Education Assistance Act (Pub. L. 93-268; 25 U.S.C. 450 (c))); or an economic enterprise (as defined in section 3(e) of the Indian Financing Act of 1974 (Pub. L. 93-362; 25 U.S.C. 1452(e))) whether such economic enterprise is organized for profit or nonprofit purposes; which has an agreement with the Defense Logistics Agency to furnish procurement technical assistance to business entities.

(b) The Contractor shall provide cooperative agreement holders, upon their request, with a list of those appropriate employees or offices responsible for entering into subcontracts under defense contracts. The list shall include the business address, telephone number, and area of responsibility of each employee or office.

(c) The Contractor need not provide the listing to a particular cooperative agreement holder more frequently than once a year.

(End of clause)

252.209-7000 ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ONSITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY (NOV 1995)

(a) The Contractor shall not deny consideration for a subcontract award under this contract to a potential subcontractor subject to on-site inspection under the INF Treaty, or a similar treaty, solely or in part because of the actual or potential presence of Soviet inspectors at the subcontractor's facility, unless the decision is approved by the Contracting Officer.

(b) The Contractor shall incorporate this clause, including this paragraph (b), in all solicitations and contracts exceeding the simplified acquisition threshold in part 13 of the Federal Acquisition Regulation, except those for commercial items.

252.209-7003 COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS (MAR 1998)

By submission of its offer, the offeror represents that, if it is subject to the reporting requirements of 37 U.S.C. 4212(d) (i.e., the VETS-100 report required by Federal Acquisition Regulation clause 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era), it has submitted the most recent report required by 38 U.S.C. 4212(d).

252.209-7004 SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY (MAR 1998)

(a) Unless the Government determines that there is a compelling reason to do so, the Contractor shall not enter into any subcontract in excess of \$25,000 with a firm, or subsidiary of a firm, that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country.

(b) A corporate officer or a designee of the Contractor shall notify the Contracting Officer, in writing, before entering into a subcontract with a party that is identified, on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs, as being ineligible for the award of Defense contracts or subcontracts because it is owned or controlled by the government of a terrorist country. The notice must include the name of the proposed subcontractor notwithstanding its inclusion on the List of Parties Excluded From Federal Procurement and Nonprocurement Programs.

252.219-7003 SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN (DOD CONTRACTS) (APR. 1996)

This clause supplements the Federal Acquisition Regulation 52.219-9, Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, clause of this contract.

(a) *Definitions. Historically black colleges and universities*, as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. The term also means any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

Minority institutions, as used in this clause, means institutions meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)). The term also includes Hispanic-serving institutions as defined in section 316(b)(1) of such Act (20 U.S.C. 1059c(b)(1)).

(b) Except for company or division-wide commercial items subcontracting plans, the term *small disadvantaged business*, when used in the FAR 52.219-9 clause, includes historically black colleges and universities and minority institutions, in addition to small disadvantaged business concerns.

(c) Work under the contract or its subcontracts shall be credited toward meeting the small disadvantaged business concern goal required by paragraph (d) of the FAR 52.219-9 clause when:

(1) It is performed on Indian lands or in joint venture with an Indian tribe or a tribally-owned corporation, and

(2) It meets the requirements of 10 U.S.C. 2323a.

(d) Subcontracts awarded to workshops approved by the Committee for Purchase from People Who are Blind or Severely Disabled (41 U.S.C. 46-48), may be counted toward the Contractor's small business subcontracting goal.

(e) A mentor firm, under the Pilot Mentor-Protege Program established under Section 831 of Pub. L. 101-510, as

amended, may count toward its small disadvantaged business goal, subcontracts awarded--

(f) The master plan approval referred to in paragraph (f) of the FAR 52.219-9 clause is approval by the Contractor's cognizant contract administration activity.

(g) In those subcontracting plans which specifically identify small, small disadvantaged, and women-owned small businesses, the Contractor shall notify the Administrative Contracting Officer of any substitutions of firms that are not small, small disadvantaged, or women-owned small businesses for the firms listed in the subcontracting plan. Notifications shall be in writing and shall occur within a reasonable period of time after award of the subcontract. Contractor-specified formats shall be acceptable.

(End of clause)

252.225-7012 PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES (AUG 2000)

(a) The Contractor agrees to deliver under this contract only such of the following articles that have been grown, reprocessed, reused, or produced in the United States, its possessions, or Puerto Rico --

- (1) Food;
- (2) Clothing;
- (3) Tents, tarpaulins, or covers;
- (4) Cotton and other natural fiber products;
- (5) Woven silk or woven silk blends;
- (6) Spun silk yarn for cartridge cloth;
- (7) Synthetic fabric, and coated synthetic fabric, including all textile fibers and yarns that are for use in such fabrics;
- (8) Canvas products;
- (9) Wool (whether in the form of fiber or yarn or contained in fabrics, materials, or manufactured articles); or
- (10) Any item of individual equipment (Federal supply Classification 8465) manufactured from or containing such fibers, yarns, fabrics, or materials.

(b) This clause does not apply --

- (1) To supplies listed in FAR section 25.104(a), or other supplies for which the Government has determined that a satisfactory quality and sufficient quantity cannot be acquired as and when needed at U.S. market prices;
- (2) To foods which have been manufactured or processed in the United States, its possessions, or Puerto Rico;
- (3) To chemical warfare protective clothing produced in the countries listed in subsection 225.872-1 of the Defense FAR Supplement; or
- (4) To fibers and yarns that are for use in synthetic fabric or coated synthetic fabric (but does apply to the synthetic or coated synthetic fabric itself), if--
 - (i) The fabric is to be used as a component of an end item that is not a textile product. Examples of textile products, made in whole or in part of fabric, include--

(a) Draperies, floor coverings, furnishings, and bedding (Federal Supply Group 72, Household and Commercial Furnishings and Appliances);

(B) Items made in whole or in part of fabric in Federal Supply Group 83, Textile/leather/furs/apparel/findings/tents/flags, or Federal Supply Group 84, Clothing, Individual Equipment and Insignia;

(C) Upholstered seats (whether for household, office, or other use); and

(D) Parachutes (Federal Supply Class 1670); or

(ii) The fibers and yarns are para-aramid fibers and yarns manufactured in the Netherlands.

(End of clause)

252.225-7031 SECONDARY ARAB BOYCOTT OF ISRAEL (JUN 1992)

(a) Definitions. As used in this clause--

(1) "Foreign person" means any person other than a United States person as defined in Section 16(2) of the Export Administration Act of 1979 (50 U.S.C. App. Sec 2415).

(2) "United States person" is defined in Section 16(2) of the Export Administration Act of 1979 and means any United States resident or national (other than an individual resident outside the United States and employed by other than a United States person), any domestic concern (including any permanent domestic establishment of any foreign concern), and any foreign subsidiary or affiliate (including any permanent foreign establishment) of any domestic concern which is controlled in fact by such domestic concerns, as determined under regulations of the President.

(b) Certification. By submitting this offer, the Offeror, if a foreign person, company or entity, certifies that it--

(1) Does not comply with the Secondary Arab Boycott of Israel; and

(2) Is not taking or knowingly agreeing to take any action, with respect to the Secondary Boycott of Israel by Arab countries, which 50 U.S.C. App. Sec 2407(a) prohibits a United States person from taking.

(End of clause)

252.227-7033 RIGHTS IN SHOP DRAWINGS (APR 1966)

(a) Shop drawings for construction means drawings, submitted to the Government by the Construction Contractor, subcontractor or any lower-tier subcontractor pursuant to a construction contract, showing in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., form, fit, and attachment details) of materials or equipment. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

(b) This clause, including this paragraph (b), shall be included in all subcontracts hereunder at any tier.

252.231-7000 SUPPLEMENTAL COST PRINCIPLES (DEC 1991)

When the allowability of costs under this contract is determined in accordance with part 31 of the Federal Acquisition Regulation (FAR), allowability shall also be determined in accordance with part 231 of the Defense FAR Supplement, in effect on the date of this contract.

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

(End of clause)

252.236-7005 AIRFIELD SAFETY PRECAUTIONS. (DEC 1991)

(a) Definitions. As used in this clause --

(1) "Landing areas means" --

(i) The primary surfaces, comprising the surface of the runway, runway shoulders, and lateral safety zones. The length of each primary surface is the same as the runway length. The width of each primary surface is 2,000 feet (1,000 feet on each side of the runway centerline);

(ii) The "clear zone" beyond the ends of each runway, i.e., the extension of the primary surface for a distance of 1,000 feet beyond each end of each runway;

(iii) All taxiways, plus the lateral clearance zones along each side for the length of the taxiways (the outer edge of each lateral clearance zone is laterally 250 feet from the far or opposite edge of the taxiway, e.g., a 75-foot-wide taxiway would have a combined width of taxiway and lateral clearance zones of 425 feet); and

(iv) All aircraft parking aprons, plus the area 125 feet in width extending beyond each edge all around the aprons.

(2) "Safety precaution" areas means those portions of approach-departure clearance zones and transitional zones where placement of objects incident to contract performance might result in vertical projections at or above the approach-departure clearance, or the transitional surface.

(i) "The approach-departure clearance surface" is an extension of the primary surface and the clear zone at each end of each runway, for a distance of 50,000 feet, first along an inclined (glide angle) and then along a horizontal plane, both flaring symmetrically about the runway centerline extended.

(A) The inclined plane (glide angle) begins in the clear zone 200 feet past the end of the runway (and primary surface) at the same elevation as the end of the runway. It continues upward at a slope of 50:1 (1 foot vertically for each 50 feet horizontally) to an elevation of 500 feet above the established airfield elevation. At that point the plane becomes horizontal, continuing at that same uniform elevation to a point 50,000 feet longitudinally from the

beginning of the inclined plane (glide angle) and ending there.

(B) The width of the surface at the beginning of the inclined plane (glide angle) is the same as the width of the clear zone. It then flares uniformly, reaching the maximum width of 16,000 feet at the end.

(ii) The "approach-departure clearance zone" is the ground area under the approach-departure clearance surface.

(iii) The "transitional surface" is a sideways extension of all primary surfaces, clear zones, and approach-departure clearance surfaces along inclined planes.

(A) The inclined plane in each case begins at the edge of the surface.

(B) The slope of the incline plane is 7:1 (1 foot vertically for each 7 feet horizontally). It continues to the point of intersection with the --

(1) Inner horizontal surface (which is the horizontal plane 150 feet above the established airfield elevation); or

(2) Outer horizontal surface (which is the horizontal plane 500 feet above the established airfield elevation), whichever is applicable.

(iv) The "transitional zone" is the ground area under the transitional surface. (It adjoins the primary surface, clear zone, and approach-departure clearance zone.)

(b) General. (1) The Contractor shall comply with the requirements of this clause while --

(i) Operating all ground equipment (mobile or stationary);

(ii) Placing all materials; and

(iii) Performing all work, upon and around all airfields.

(2) The requirements of this clause are in addition to any other safety requirements of this contract.

(c) The Contractor shall -

(1) Report to the Contracting Officer before initiating any work;

(2) Notify the Contracting Officer of proposed changes to locations and operations;

(3) Not permit either its equipment or personnel to use any runway for purposes other than aircraft operation without permission of the Contracting Officer, unless the runway is -

(i) Closed by order of the Contracting Officer; and

(ii) Marked as provided in paragraph (d)(2) of this clause;

(4) Keep all paved surfaces, such as runways, taxiways, and hardstands, clean at all times and, specifically, free from small stones which might damage aircraft propellers or jet aircraft;

(5) Operate mobile equipment according to the safety provisions of this clause, while actually performing work on the airfield. At all other times, the Contractor shall remove all mobile equipment to locations -

(i) Approved by the Contracting Officer;

(ii) At a distance of at least 750 feet from the runway centerline, plus any additional distance; and

(iii) Necessary to ensure compliance with the other provisions of this clause; and

(6) Not open a trench unless material is on hand and ready for placing in the trench. As soon as practicable after material has been placed and work approved, the Contractor shall backfill and compact trenches as required by the contract. Meanwhile, all hazardous conditions shall be marked and lighted in accordance with the other provisions of this clause.

(d) Landing areas. The Contractor shall -

(1) Place nothing upon the landing areas without the authorization of the Contracting Officer;

(2) Outline those landing areas hazardous to aircraft, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated low-intensity red flasher lights by night;

(3) Obtain, at an airfield where flying is controlled, additional permission from the control tower operator every time before entering any landing area, unless the landing area is marked as hazardous in accordance with paragraph (d)(2) of this clause;

(4) Identify all vehicles it operates in landing areas by means of a flag on a staff attached to, and flying above, the vehicle. The flag shall be three feet square, and consist of a checkered pattern of international orange and white squares of 1 foot on each side (except that the flag may vary up to ten percent from each of these dimensions);

(5) Mark all other equipment and materials in the landing areas, using the same marking devices as in paragraph (d)(2) of this clause; and

(6) Perform work so as to leave that portion of the landing area which is available to aircraft free from hazards, holes, piles of material, and projecting shoulders that might damage an airplane tire.

(e) Safety precaution areas. The Contractor shall -

(1) Place nothing upon the safety precaution areas without authorization of the Contracting Officer;

(2) Mark all equipment and materials in safety precaution areas, using (unless otherwise authorized by the Contracting Officer) red flags by day, and electric, battery-operated, low-intensity red flasher lights by night; and

(3) Provide all objects placed in safety precaution areas with a red light or red lantern at night, if the objects project above the approach-departure clearance surface or above the transitional surface.

252.236-7006 COST LIMITATION (JAN 1997)

(a) Certain items in this solicitation are subject to statutory cost limitations. The limitations are stated in the Schedule.

(b) An offer which does not state separate prices for the items identified in the Schedule as subject to a cost limitation may be considered nonresponsive.

(c) Prices stated in offers for items subject to cost limitations shall include an appropriate apportionment of all costs, direct and indirect, overhead, and profit.

(d) Offers may be rejected which--

(1) Are materially unbalanced for the purpose of bringing items within cost limitations; or

(2) Exceed the cost limitations, unless the limitations have been waived by the Government prior to award.

252.236-7008 CONTRACT PRICES - BIDDING SCHEDULES. (DEC 1991)

(a) The Government's payment for the items listed in the Bidding Schedule shall constitute full compensation to the Contractor for --

(1) Furnishing all plant, labor, equipment, appliances, and materials; and

(2) Performing all operations required to complete the work in conformity with the drawings and specifications.

(b) The Contractor shall include in the prices for the items listed in the Bidding Schedule all costs for work in the specifications, whether or not specifically listed in the Bidding Schedule.

252.242-7000 POSTAWARD CONFERENCE (DEC 1991)

The Contractor agrees to attend any postaward conference convened by the contracting activity or contract administration office in accordance with Federal Acquisition Regulation subpart 42.5.

(End of clause)

252.243-7001 PRICING OF CONTRACT MODIFICATIONS (DEC 1991)

When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR part 31 and DFARS part 231, in effect on the date of this contract, apply.

252.243-7002 REQUESTS FOR EQUITABLE ADJUSTMENT (MAR 1998)

(a) The amount of any request for equitable adjustment to contract terms shall accurately reflect the contract adjustment for which the Contractor believes the Government is liable. The request shall include only costs for performing the change, and shall not include any costs that already have been reimbursed or that have been separately claimed. All indirect costs included in the request shall be properly allocable to the change in accordance with applicable acquisition regulations.

(b) In accordance with 10 U.S.C. 2410(a), any request for equitable adjustment to contract terms that exceeds the simplified acquisition threshold shall bear, at the time of submission, the following certificate executed by an individual authorized to certify the request on behalf of the Contractor:

I certify that the request is made in good faith, and that the supporting data are accurate and complete to the best of my knowledge and belief.

(Official's Name)

(Title)

(c) The certification in paragraph (b) of this clause requires full disclosure of all relevant facts, including--

(1) Cost or pricing data if required in accordance with subsection 15.403-4 of the Federal Acquisition Regulation (FAR); and

(2) Information other than cost or pricing data, in accordance with subsection 15.403-3 of the FAR, including actual cost data and data to support any estimated costs, even if cost or pricing data are not required.

(d) The certification requirement in paragraph (b) of this clause does not apply to----

(1) Requests for routine contract payments; for example, requests for payment for accepted supplies and services, routine vouchers under a cost-reimbursement type contract, or progress payment invoices; or

(2) Final adjustment under an incentive provision of the contract.

252.244-7000 SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DOD)
(MAR 2000)

In addition to the clauses listed in paragraph (c) of the Subcontracts for Commercial Items and Commercial Components clause of this contract (Federal Acquisition Regulation 52.244-6), the Contractor shall include the terms of the following clauses, if applicable, in subcontracts for commercial items or commercial components, awarded at any tier under this contract:

252.225-7014 Preference for Domestic Specialty Metals, Alternate I (10 U.S.C. 2241 note).

252.247-7023 Transportation of Supplies by Sea (10 U.S.C. 2631).

252.247-7024 Notification of Transportation of Supplies by Sea (10 U.S.C. 2631).

(End of clause)

252.246-7000 MATERIAL INSPECTION AND RECEIVING REPORT (DEC 1991)

At the time of each delivery of supplies or services under this contract, the Contractor shall prepare and furnish to the Government a Material Inspection and Receiving Report in the manner and to the extent required by Appendix F, Material Inspection and Receiving Report, of the Defense FAR Supplement.

(End of clause)

252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) Definitions. As used in this clause --

(1) "Components" means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.

(2) "Department of Defense" (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

(3) "Foreign flag vessel" means any vessel that is not a U.S.-flag vessel.

(4) "Ocean transportation" means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) "Subcontractor" means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract.

(6) "Supplies" means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) "Supplies" includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and

vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) "U.S.-flag vessel" means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if--

(i) This contract is a construction contract; or

(ii) The supplies being transported are--

(A) Noncommercial items; or

(B) Commercial items that--

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it contracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that --

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum --

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and

facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information --

- (1) Prime contract number;
- (2) Name of vessel;
- (3) Vessel flag of registry;
- (4) Date of loading;
- (5) Port of loading;
- (6) Port of final discharge;
- (7) Description of commodity;
- (8) Gross weight in pounds and cubic feet if available;
- (9) Total ocean freight in U.S. dollars; and
- (10) Name of the steamship company.

(f) The Contractor agrees to provide with its final invoice under this contract a representation that to the best of its knowledge and belief --

- (1) No ocean transportation was used in the performance of this contract;
- (2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;
- (3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or
- (4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

| ITEM DESCRIPTION | CONTRACT LINE ITEMS | QUANTITY |
|---------------------|------------------------|----------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| TOTAL_____ | | |

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) The Contractor shall include this clause, including this paragraph (h), in all subcontractors under this contract that--

- (1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and
- (2) Are for a type of supplies described in paragraph (b)(3) of this clause.

(End of clause)

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(End of clause)

252.248-7000 PREPARATION OF VALUE ENGINEERING CHANGE PROPOSALS (MAY 1994)

Prepare value engineering change proposals, for submission pursuant to the value engineering clause of this contract, in the format prescribed by the version of MIL-STD-973 in effect on the date of contract award.

(End of clause)

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SECTION 00800

SPECIAL CONTRACT REQUIREMENTS

1. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK:

a. Base Bid: The Contractor shall be required to (i) commence work under this contract within 5 calendar days after the date the Contractor receives the notice to proceed, (ii) prosecute the work diligently, and (iii) complete the entire work ready for use not later than 270 calendar days after the date the Contractor receives the notice to proceed, except in case the Contracting Officer determines that seeding is not feasible during the construction period, the Contractor shall accomplish such seeding in the first planting period following the contract completion date. This action will not operate to extend the performance time for the balance of the work. The time stated for completion shall include final cleanup of the premises. The Contractor may not begin work on any portion of Taxiway L until the work on Taxiways Y and H is complete and accepted by the Contracting Officer.

Option: The Contracting Officer has the right to exercise the Option up to 180 days after the Contractor receives the notice to proceed for the Base Bid. The contract performance time will be extended 90 days to accommodate the completion of the Option work. The addition of Option to the contract will not alter the completion time requirement for the base contract.

b. Location: The site of work is located at the Northwest end of Taxiway L. The site of the work is on a military reservation and all rules and regulations issued by the Commanding Officer covering general safety, security, and sanitary requirements, etc. shall be observed by the Contractor.

c. The Contractor shall furnish all labor, materials, equipment, and services (except those furnished by the Government) for the following work:

Construction and Repair of Taxiways, Army National Guard Area
McGuire Air Force Base, Wrightstown, New Jersey

d. All work shall be in accordance with the drawings and specifications or instructions attached hereto and made a part thereof, or to be furnished hereafter by the Contracting Officer and subject, in every detail, to his supervision, direction, and instructions.

e. Magnitude of Construction Project: The estimated value of the proposed work is between \$1,000,000 and \$5,000,000.

f. Hours of Work: Unless otherwise specified, the Contractor will be permitted to perform the contract work between the hours of 7:45 am and 4:30 pm, Monday through Friday. Federal Holidays that fall within the workweek will not be considered as workdays. Prior to performing any work during hours other than those specified, the Contractor shall

submit an overtime request to the Contracting Officer for review and approval. Overtime requests shall be submitted no less than 48 hours prior to the time the Contractor desires to perform the overtime work.

g. The Construction Limits, as defined herein, are located within McGuire AFB property limits. Daily construction work site clean up shall be accomplished by the Contractor. This clean up shall include the placing of construction material and equipment in a neat and orderly arrangement. Rubbish, debris, rubble and garbage shall not be permitted to accumulate. If the Contractor has any dumpsters in the construction limits, they shall be clearly marked with a sign "for private use only, not for use of base personnel." Dumpsters shall be emptied when contents mounds to height of sides. At the end of the workday, the Contractor shall inspect the site to ensure that all paper, cardboard and similar materials are removed to provide a litter free appearance. Upon completion of all work outlined in the contract drawings and specifications, the Contractor shall remove from the confines of the Base, his construction materials and his equipment. Trailers on the work site shall be so located as to be shielded from view from base roads as effectively as possible. The Construction limits, office and storage trailer locations must be kept clean and in an orderly manner at all times. Storage of materials/debris under the trailers is prohibited. Failure to do so will result in the Government with holding of additional retainage until the construction area is cleaned.

h. Cleanliness: The Contractor shall protect Government property and furnishings that may be in or adjacent to the work area with appropriate clean drop cloths, barricades, dust-stops, or other provisions as determined by, or approved by, the Contracting Officer Representative prior to starting work. The Contractor shall remove all debris, tools, materials and equipment and other items when work is completed in each particular area.

i. Daily Clean-Up: Daily construction site clean up shall be accomplished by the Contractor. This clean up shall include the placing of construction material and equipment in a neat and orderly arrangement on the site. Equipment and materials must not block access to existing facilities. The Contractor shall inspect the site and area on a daily basis to ensure that all rubbish, debris, rubble, garbage paper, cardboard, demolition products and similar materials removed to provide a litter-free appearance. On-Base access routes utilized by construction equipment and/or delivery vehicles shall be maintained free from clay or mud balls, clods and mud. During the growing season (April through October), all grass areas in the Contractor's construction area or within ten feet of Contractor construction areas or within ten feet of buildings or portions of buildings under construction shall be mowed and trimmed to maintain neat grassy areas of reasonable length, by the Contractor. Grass height shall never be allowed to exceed six (6) inches.

j. Construction equipment may not be stored at work sites long term. If equipment is not used for a period of 21 calendar days, the equipment must be removed from site. The Contracting Officer Representative must approve exceptions to this condition such as equipment required at a later date.

k. Parking on the grass is not permitted. The Contractor will not be allowed to drive on grass with his vehicles to gain access to the work sites. The Contractor and their personnel must park their vehicles within the construction limits.

l. Coordination of Work: Work that will interrupt utilities must be coordinated with the Contracting Officer Representative. From 0730 hours to 1630 hours, when construction personnel and/or equipment are within 100 feet of runway 18/36, the contractor shall maintain direct radio contact with the McGuire Aircraft control tower. Tower personnel will contact the Contractor by radio when aircraft are about to land or take off from runway 18/36. The contractor shall stop work within 100 feet of the runway and remove all personnel and equipment from within 100 feet of the runway until given clearance from the tower personnel that work may resume.

m. Daily Work Schedules: In order to closely coordinate work under this contract, the Contractor shall prepare for and attend a weekly coordinating meeting with the Contracting Officer Representative and using service, at which time the Contractor shall submit for coordination and approval, his proposed daily work schedule for the next two week period. Required temporary utility services, time and duration of interruptions, and protection of adjoining areas shall be included with the Contractor's proposed two-week work schedule. At this meeting, the Contractor shall also submit his schedule of proposed dates and times of all preparatory inspections to be performed during the next two weeks. The items of work listed on the proposed two week schedule are to be keyed to the Network Analysis Schedule (NAS) by activity number and description for each activity anticipated to be performed during the next two-week period. Coordination action by the Contracting Officer Representative relative to these schedules will be accomplished during these weekly meetings.

n. Base Civil Engineering Work Clearance Request, AF Form 103:

1. In accordance with McGuire AFB Regulations, prior to commencing construction work, or whenever the ground surface is to be disturbed deeper than three inches, or when erecting structures or operating equipment near overhead lines, the Contractor or any Subcontractors performing work shall be responsible for obtaining from the Contracting Officer Representative, and having in their possession at all times while digging, an approved AF Form 103.

2. AF Form 103: The AF Form 103 will be completed and processed by the Contractor, through the applicable McGuire Base Civil Engineering Offices noted on the form, prior to the actual start of excavation or the erection operation, and will remain valid for 30 days. The written request shall include details and methods to be used for the excavation.

3. The Contractor or Subcontractors shall contact the applicable McGuire Base Civil Engineer's office in writing a minimum of five (5) working days prior to each expiration date and notify them of the need to revalidate the form.

o. Accident Prevention: The Contractor shall comply with all Air Force Occupational Safety and Health Standards (AFOSH Standards).

1. Confined Spaces: Contractors, which enter confined spaces during construction operations, shall do so in strict accordance with AFOSH Standard 127-25. The Contractor shall request the proper permits for access from the Contracting Officer Representative, in writing, a minimum of 10 work days prior to confined space entry. All permits will be issued by base safety.

2. Occupational Safety and Health Act: Contractors shall comply with OSHA 1926, Construction Standards and the portions of OSHA 1910 standards that are applicable to construction. The Army Corps of Engineers Manual EM 385-1-1 will be used in the absence of guidance in OSHA regulations.

3. Submittal: The Contractor shall prepare and submit for Government review, a site/contract-specific Health and Safety Plan in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120.

4. Safety Plan: The Plan shall establish a site/contract-specific program for medical surveillance, training, hazard assessment, worker protection, site control, accident prevention and response to emergencies. Standard practices and procedures of industrial hygiene, occupational health and safety, and environmental protection shall be prescribed in the plan. The plan shall also include Material Safety Data (MSDS) for all hazardous materials associated with the contract. Plan Review: This Plan must be reviewed by appropriated base agency and approved by the Contracting Officer Representative prior to the commencement of all on-base work.

p. Fire Protection: Welding, Burning and Cutting Operations:

Welding Operation: All welding and burning operations shall be accomplished in strict compliance with the requirements outlined in AFOSH Standard 127-5; the National Fire Protection Association Standard, and the Department of the Army Corps of Engineers General Safety requirements Manual EM 385-1-1. Prior to starting welding, cutting, brazing, burning and/or any other flame or spark producing operations, the Contractor or Subcontractor performing the work shall obtain a burning permit for the Base Fire Department. This permit, USAF Welding, Cutting and Brazing (AF Form 592), is the only acceptable authorization for performance of this type of work. The request for this permit can be accomplished by contacting the McGuire AFB Fire Department at (609) 724-3975. A Fire Department representative will respond to the work site, evaluate the site conditions and issue the required permit as required. Under normal conditions, the Fire Department representative will respond to the work site within one hour after receiving the request for the permit for that day. A copy of each permit shall be retained at the project site until work for which the permit was issued is completed. The Contractor or Subcontractor shall provide required equipment, materials, shield, extinguishers, sand and other devices at each location where work of the type requiring a permit is conducted.

q. Environmental Protection: The Contractor shall provide and maintain environmental protection during the life of the contract as defined herein. Environmental protection shall be provided to correct

conditions that might endanger the environment during normal construction operations.

1. Vegetation and Mulch: Temporary protection shall be provided on side and back slopes when rough grading is complete or when sufficient soil is exposed to require protection to prevent erosion. Protection shall be afforded by accelerated growth of permanent vegetation, temporary vegetation, mulching or netting. Slopes too steep for stabilization by other means shall be stabilized by hydro seeding, mulch anchored in place, covering the anchored netting, sodding, or such combination of these and other methods as may be necessary for effective erosion control.

2. Disposal of Solid Waste: The Contractor shall transport waste off Government property, and disposal shall be in a manner that complies with Federal, State and Local requirements. The Contractor shall provide the Contracting Officer Representative with a copy of the State and/or Local permit or license, which reflects such agencies disposal authorization. The permit or license, and the location of the disposal area, shall be provided to the Contracting Officer Representative prior to transporting materials off Government property.

3. Prosecution of work within Wetland Areas: Not Used.

r. Temporary Construction: Upon completion and acceptance of the construction, the Contractor shall remove all signs of temporary construction facilities such as work areas, Structures, foundations of temporary structures, stockpiles of excess or waste materials, debris, and other vestiges of construction. All areas shall be restored to pre-contract construction conditions, including grading, sodding and other restorations.

s. Landscape Protection: Provide protection for all existing landscape features such as trees, shrubs, bushes, plantings and sod in and around the area of construction. No existing tree, shrubs, bushes or other items shall be affected in any way, by Contractor actions, unless required by specifications. Prior to any demolition or construction in proximity to any existing landscape feature, fencing shall protect the feature, barricades, temporary removal and/or other approved devices. When construction requires that heavy machinery work in close proximity to existing mature trees, the trees shall be protected. The Contractor shall replace in kind all damaged items with new.

t. Trenching and Excavation: Excavation and related work shall be completed in scheduled phase between blocks or manholes for installations requiring testing. Work shall be barricaded in accordance with Corps of Engineer Manual EM 385-1-1 and AFOSH Std. 127-66. For excavations in which testing is not required, the trenches shall be backfilled at the end of the day except for the last 15 feet. Backfilling must be accompanied daily; established structures and plantings must be avoided; excavation shall not begin until material and equipment for the specified portion of the job is available on the site. Trenches or excavations which cut roads, parking lots, driveways and delivery routes shall be fully coordinated between the Contractor, and the Contracting Office Representative a minimum of five (5) days prior to excavation. The Contractor shall provide non-skid surface, steel road plates until the vehicle routes are permanently repaired.

Excavations and the repair, which will traverse completely across vehicle routes, shall be scheduled in stages, which allow crossing of vehicles until road plates, and/or permanent repairs are in place.

u. Barricades are required in accordance with the referenced safety regulations. Each job site will be clearly identified by signs, and protected by barriers suitably marked by reflective materials, and illumination for easy sighting after dark. This provision is required IAW AFOSH Standard 127-66, Chapter 4, paragraph 401, f(1).

v. Airfield Access:

1. Airfield Access: Contractors, which are required to access the airfield-restricted area, must obtain a permit by using a MAFB Form 11. Upon approval of access, the permit will be good for a period of one year. Each vehicle driver must have a valid permit. Permits are not transferable. Contractor must follow McGuire AFB Regulation 24-301, "Motor Vehicles, Control of Vehicles and Equipment on the Flight line". This regulation establishes procedures for personnel operating military or privately owned vehicles (POV's) and equipment on the flight line and outlines the unit flight line driver-training program.

2. Personal Access: Contractor personnel are allowed in the restricted area only if a valid contract is in effect. Entrance to the work site must be by permitted vehicle.

3 Contractors which are required to perform work in the airfield restricted area must follow FAA Advisory Circular Operational Safety on Airports During Construction #AC 150/5370-2C.

4. The Contractor shall use Broidy Road entrance for access and yield right of way to aircraft using Taxiway H. The contractor should provide traffic control personnel at Taxiway H to insure that construction vehicles do not cross Taxiway H while it is in use by aircraft. The Contractor shall assure that Taxiway H is free of dirt and debris when his vehicles use the passageway.

w. Severe Weather Warning Requirements: When notified by the Contracting Officer Representative that a severe weather warning has been issued for the area in which construction is being performed, the Contractor shall immediately take action to tie down, or otherwise secure structures, materials and equipment on the job site that could become missiles as a result of strong surface winds, thunderstorms, or other weather related conditions. This requirement is applicable twenty-four (24) hours a day, seven (7) days a week.

x. Construction Limits and Access Route: In order to minimize impact to the base traffic and to the visual appearance of the base during the construction, the Contractor shall perform the work in accordance with the following:

1. Construction limits for the project shall be as shown on the drawings. All construction activities are to be contained within the construction limits as designated on the drawings, including the staging areas and stockpile area.

2. Contractor is limited to the area shown on the drawings for staging. This limitation is inclusive of Contractor and his Subcontractors. If Contractor requires additional area for his office and storage trailers, or revision to their location, the Contractor shall submit written justification to the Contracting Officer Representative and obtain his written approval before proceeding. The cost for development and improvement of this additional storage area is by Contractor at his expense. Any trailers, offices and storage buildings housed by the Contractor or his Subcontractors on McGuire AFB shall be painted the standard base color, "Wheat Sheaf" (#227-3 as Manufactured by M. A. Bruder or equal).

3. All material deliveries will be through the McGuire Air Force Base main entrance gate #1, unless otherwise directed by the Contracting Office. All truck delivery drivers must be familiar with the Construction Access Route to the site, if a specific route is designated on the drawings. If the driver(s) are not familiar with the route, they may require an escort provided by Contractor at his expense to the construction site.

4. Contractor and subcontractor personnel's POV's shall access the site through the main gate.

y. Dumpsters: Equip dumpsters with a secure cover and paint the standard base color, "Wheat Sheaf". The cover shall be closed at all times, except when being loaded with trash and debris. Locate dumpster(s) behind the construction fence or out of the public view. Empty site dumpsters at least once a week, or as needed of keep the site free of debris and trash. If necessary, provide 208-liter (55-gallon) trash containers painted the darker base color, "Dark Brown" (Federal Standard 595B #20040) to collect debris in the construction site area. Locate the trash containers behind the construction fence or out of public view. The Contractor shall empty trash containers at least once a day. Large demolition normally requires a large dumpster without lids-these are acceptable but should not have debris higher than the sides before emptying.

z. Temporary Sanitation Facilities: All temporary sewer and sanitation facilities shall be self-contained units with both urinals and stool capabilities. Ventilate the units to control odors and fumes and empty and clean them at least once a week or more often if required by the contracting officer. The doors shall be self-closing. The exterior of the unit will match the base standard color, "Wheat Sheaf". Locate the facility behind the construction fence or out of the public view.

aa. Construction and Safety Fence: The contractor shall provide a temporary safety fence with gates and warning signs at the construction site prior to the start of work to protect the public from construction activities. Fence shall be bright orange, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on a minimum 10 foot centers. The Contractor must remove the fence upon completion and acceptance of the work.

2. LIQUIDATED DAMAGES - CONSTRUCTION

a. If the Contractor fails to complete the work within the time specified in the contract, or any approved extension, the Contractor shall pay to the Government as liquidated damages, the sum of \$366 for each day of delay. If the Contractor fails to complete the final punch list before the Beneficial Occupancy Date, the Contractor shall pay to the Government the sum of \$92 for each day of delay until the final punch list is complete.

b. If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

c. If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

3. EQUAL OPPORTUNITY PREAWARD CLEARANCE OF SUBCONTRACTORS
(APR 1984)

Notwithstanding the clause of this contract entitled "Subcontracts", the Contractor shall not enter into a first-tier subcontract for an estimated or actual amount of \$1 million or more without obtaining in writing from the Contracting Officer a clearance that the proposed subcontractor is in compliance with the equal opportunity requirements and therefore is eligible for award. (FAR 52.222-28)

4. INSURANCE - WORK ON A GOVERNMENT INSTALLATION

a. The Contractor shall procure and maintain during the entire period of his performance under this contract the following minimum insurance:

(1) General Liability Insurance (Comprehensive form of policy):

Bodily Injury Liability - \$500,000 per occurrence.

(2) Automobile Liability Insurance (Comprehensive form of policy):

Bodily Injury Liability - \$200,000 per person and \$500,000 per accident.

Property Damage Liability - \$20,000 per accident.

(3) Workmen's Compensation and Employer's Liability Insurance:

Compliance with applicable workmen's compensation and occupational disease statutes is required. Employer's liability coverage in the minimum amount of \$100,000 is also required.

b. Prior to the commencement of work hereunder, the Contractor shall furnish to the Contracting Officer a certificate or statement of the above required insurance. The policies evidencing required insurance shall contain an endorsement to the effect that cancellation or any

material change in the policies adversely affecting the interests of the Government in such insurance shall not be effective for such a period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than thirty (30) days after written notice thereof to the Contracting Officer.

c. The Contractor agrees to insert the substances of this clause, including this paragraph c., in all subcontracts hereunder.

5. PERFORMANCE OF WORK BY THE CONTRACTOR (1984 APR)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least twenty (20) percent of the total amount of work to be performed under the contract. This percentage may be reduced by supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. (FAR 52.236-1)

6. CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in 4 copies. Each certificates shall be signed by an official authorized to certify in behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certification apply. Copies of laboratory tests reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfying material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements. (ECI 7-670.3)

7. IMPLEMENTING GUARANTEES

At any time subsequent to the acceptance by the Government of a completed installation under this contract, which installation is required to be covered by a specific guarantee under the terms of the various sections in the TECHNICAL PROVISIONS, the Base Commander will be an authorized party for the purpose of implementing the provisions of such guarantees in behalf of the Government.

8. BID GUARANTEE

See contract clause entitled BID GUARANTEE in Section 00700 CONTRACT CLAUSES.

9. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS

See contract clause entitled CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS in Section 00700 CONTRACT CLAUSES. The following is a listing of the contract drawings:

| Drawing No. | Title |
|-------------|--|
| 61100 | Title Sheet |
| 61101 | Site Plan |
| 61102 | Survey Information |
| 61103 | Pavement Removal and Preparation Plan - T/W L |
| 61104 | Pavement Removal and Preparation Plan - T/W H |
| 61105 | Final Paving/Marking Plan - Taxiway L |
| 61106 | Final Paving/Marking Plan - Taxiway H |
| 61107 | Pavement Details - Taxiway L |
| 61108 | Pavement Details - Taxiways H, L and Y |
| 61109 | Pavement Details - Taxiway H |
| 61110 | Final Paving/Marking Plan - Enlarged Views T/W L |
| 61111 | Erosion Control Plan - Taxiway L |
| 61112 | Control Plan - Taxiway Y |
| 61113 | Grading Plan - Taxiway Y |
| 61114 | Utility and Drainage Plan - Taxiway Y |
| 61115 | Typical Pavement Sections - Taxiway Y |
| 61116 | Drainage Profile - Taxiway Y |
| 61117 | Drainage Details - Taxiway Y |
| 61118 | Paving/Jointing Details - Taxiway Y |
| 61119 | Erosion Control Plan - Taxiways H and Y |
| 61120 | Erosion Control Details Taxiways H, L and Y |
| 61121 | Boring Logs - Taxiway Y |
| 61122 | Boring Logs - Taxiway Y |
| 61123 | Boring Logs - Taxiways Y |
| 61124 | Boring Logs - Taxiway L |
| 61125 | Pavement Marking Plan - Taxiway Y |
| 61126 | Electrical Site Plan |
| 61127 | Edge, Exit and Holding Lights - Taxiways H and Y |
| 61128 | Edge, Exit and Holding Lights - Taxiway L |
| 61129 | Wiring Diagrams |
| 61130 | Lighting Control Building 1611 Floor Plans |
| 61131 | Light Installation Details |
| 61132 | Signage Modifications |
| 61133 | Signage Base Details and Location Plan |

10. RECORD DRAWINGS

a. General: The Contractor will maintain as-built drawings during the construction and will develop final record drawings at the completion of individual facilities.

b. Computer-Aided Drafting (CAD): If CAD files are available for the project and in addition to all other requirements indicated herein, the Contractor shall be required to update the Computer-Aided Drafting (CAD) record for the project drawings consist of computer disks or magnetic media in the appropriate CAD format (i.e. "Intergraph", "Autocad", etc.) for the project. If available the CAD record will be presented to the Contractor in addition to the mylar reproducible drawings after the approval of progress prints as indicated in paragraph "Preliminary Submittal", below. The Contractor will update the CAD record identical to the final as-built drawings, and will return the CAD record to the Contracting Officer's representatives with the same requirements and late penalty as indicated in paragraph "Final Requirements", below. Scanned drawings will not be acceptable. All other requirements indicated herein will still apply. The Contractor

may use the updated CAD record to print blue-line or mylar drawings as required.

c. Progress As-built Prints: The Contractor shall mark up one set of paper prints to show as-built construction conditions. These as-built prints shall be kept current and available on the job site at all times. All changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accordingly and neatly recorded as they occur by means of details and notes. The as-built prints will be jointly inspected for accuracy and completeness by the Contracting Officer's representative and a responsible representative of the Contractor prior to submission of each monthly pay estimate. The prints shall show the following information, but not limited thereto:

(1) The location and description of any utility lines, valves, or other installations of any kind within the construction area. The location includes dimensions to permanent features.

(2) location and dimensions of any changes with the building and structure.

(3) Correct grade or alignment of taxiway, structures or utilities if any changes were made from the contract plans.

(4) Correct elevations if changes were made in site grading

(5) Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor including but not limited to fabricated, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

(6) The topography and grades of all drainage installed or affected as part of the project construction.

(7) All changes, which result from contract modifications.

(8) Where contract drawings or specifications allow options, only the option selected for construction shall be shown on the as-built prints.

(9) All amendments to the contract drawings issued during the solicitation period shall be posted on the as-built drawings.

d. Preliminary Submittal: The Contractor shall prepare two copies of progress prints and these shall be delivered to the Contracting Officer at the time of final inspection of individual facilities for his review and approval. These as-built prints shall be neat, legible and accurate. Upon approval, one copy of the as-built prints will be returned to the Contractor for use in preparation of final as-built drawings. Upon review, if the drawings are found to contain errors and/or omission, they shall be returned to the Contractor for corrections and return of the as-built prints to the Contracting Officer within ten (10) calendar days.

e. Record Drawing Preparation: After approval of the progress as-built prints, the mylar drawings shall be modified as may be necessary to correctly show all the features of the project as it has been constructed by bringing the contract set into agreement with the approved as-built prints, adding such additional drawings as may be necessary. The Contractor shall be responsible for the protection and safety thereof until returned to the Contracting Officer. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at his expense.

1. Only personnel proficient in the preparation of engineering drawings to standards satisfactory and acceptable to the Government shall be employed to modify the mylar reproduction drawings or prepare additional new drawings. All additions and corrections to the contract drawings shall be neat, clean and legible, and shall match the adjacent line work and/or lettering being annotated in type, density, size and style. All drafting work shall be done using the same medium (pencil, plastic lead or ink) that was employed on the original contract drawings and with graphic lead on paper base material. The Contracting Officer will review all record drawings for accuracy and conformance to the above specified drafting standards. The Contractor shall make all corrections, changes, additions and deleting required to meet these standards. The title block to be used for any new as-built drawings shall be similar to that used on the original contract drawings.

2. When final revisions have been completed, each drawing shall be lettered or stamped with the words "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in lettering at least 3/16" high. All original contract drawings shall be marked either "As-Built" drawing denoting no revision on the sheet or "Revised As-Built" denoting one or more revisions. All revisions to the original contract drawings will be dated in the revision block.

f. Final Requirements: After receipt by the Contractor of the approved as-built prints and the mylar reproducible drawings, the Contractor will make final record drawings submitted within 30 days. The submittal shall consist of the completed record drawings on CD-ROM, one reproducible mylar, two blue line prints of these drawings, the annotated construction record set from which the as-built files were prepared, and, the return of the approved marked-up as-built prints. They shall be complete in all details. All paper prints and reproducible drawings will become property of the Government upon final approval. Failure to submit as-built drawings and final record drawings as required herein shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of the final record drawings shall be accomplished before final payment is made to the Contractor.

g. Beneficial Occupancy Drawings: If the Government accepts beneficial occupancy of a facility, and the Contractor is unable to provide the final record drawings within 45 days after the date of beneficial occupancy, the Contractor shall provide paper sepias for that facility. The paper sepias shall incorporate all changes to as-built drawings made up to the time of beneficial occupancy. Contractor is still obligated to comply with "Final Requirements" paragraph above.

h. Payment: No separate payment will be made for the as-built and record drawings required under this contract whether or not CAD record is updated, and all costs in connection therewith shall be considered a subsidiary obligation of the Contractor.

11. DESIGNATION OF PROPERTY ADMINISTRATOR

The Chief, Property and Accounting Section, U.S. Army Engineer District, New York, Federal Building, 26 Federal Plaza, New York, N.Y. 10278-0090 is designated as Property Administrator, in connection with this contract.

12. PHYSICAL DATA

Information and data furnished or referred to below are furnished for the Contractor's information. However, it is expressly understood that the Government will not be responsible for any interpretation or conclusion drawn therefrom by the Contractor. (FAR 52.236-4)

a. Weather Conditions: Climatological data determined from records of the U.S. Weather Bureau Station,

Mean Annual Temperature: 54.4 degrees F
Mean Annual Precipitation: 43.10 inches

See also paragraph entitled TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER.

b. Transportation Facilities:

1. Railroads: Conrail serves the locality of the proposed work. The Contractor shall make all arrangements at his expense for the use of sidings necessary for the delivery of materials, equipment, supplies, and other facilities required for completion of the work. The Contractor's use of sidings must be arranged so as not to interrupt or delay the operation of the Military reservation.

2. Highways and Roads: From Interstate 295 and the New Jersey Turnpike, State Route 68 serves the locality of the proposed work. Roads within the military reservation proposed to be used by the Contractor, shall be subject to prior approval of the Post authorities and such roads, if used, shall be maintained throughout construction and shall be restored to as good condition as existed prior to their use. The Contractor shall also construct such temporary haul roads and bridges as may be necessary for the conduct of his work. Any such temporary construction shall be restored to its original condition. All costs for the use of existing transportation facilities, for the construction of temporary facilities, and for maintenance, repair, removal and restoration shall be borne by the Contractor.

13. PRICING OF ADJUSTMENTS

When costs are a factor in any determination of a contract price adjustment pursuant to the Changes clause or any other clause of this contract, such costs shall be in accordance with Part 31 of the Federal Acquisition Regulation and DFARS 52.215-7000 (APR 1985) as follows: In determining whether a pricing adjustment is expected to exceed

\$100,000, the term "pricing adjustment" shall mean "the aggregate increases and /or decreases in cost plus applicable profits."

14. PAYMENT FOR MATERIALS DELIVERED OFF-SITE

Pursuant to the Contract Clause in this contract titled: Payment Under Fixed-Price Construction Contracts", materials delivered to the Contractor at locations other than the site of the work may be taken into consideration in making payments if included in payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site will be limited to those materials which have been approved, if required by the technical provisions; those materials which have been fabricated to the point where they are identifiable to an item of work required under this contract. Such payment will be made only after receipt of paid or receipted invoices or invoices with cancelled check showing title to the items in the prime contractor and including the value of materials and labor incorporated into the item.

15. EQUIPMENT OWNERSHIP AND OPERATING EXPENSE SCHEDULE

a. Allowable cost for construction and marine plant and equipment in sound workable condition owned or controlled and furnished by a contractor or subcontractors at any tier shall be based on actual cost data when the Government can determine both ownership and operating costs for each piece of equipment or equipment groups of similar serial and series from the Contractor's accounting records. When both ownership and operating costs cannot be determined from the Contractor's accounting records, equipment costs shall be based upon the applicable provisions of EP 1110-1-8, "Construction Equipment Ownership and Operating Expense Schedule," Region 1. Working conditions shall be considered to be average for determining equipment rates using the schedule unless specified otherwise by the Contracting Officer. For equipment not included in the schedule, rates for comparable pieces of equipment may be used or a rate may be developed using the formula provided in the schedule. For forward pricing, the schedule in effect at the time of negotiation shall apply. For retrospective pricing, the schedule in effect at the time the work was performed shall apply.

(* This manual can be ordered from the Government Printing office by calling telephone number (202) 783-3238. There is a charge for the manual.)

b. Equipment rental costs are allowable, subject to the provisions of FAR 31.105(d)(ii) and FAR 31.205-36 substantiated by certified copies of paid invoices. Rates for equipment rented from an organization under common control, lease-purchase or sale-leaseback arrangements will be determined using the schedule except that rental costs leased from an organization under common control that has an established practice of leasing the same or similar equipment to unaffiliated lessees are allowable. Costs for major repairs and overhaul are unallowable.

c. When actual equipment costs are proposed and the total amount of the pricing action is over \$25,000, cost or pricing data shall be submitted on Standard Form 1411, "Contract Pricing Proposal Cover

Sheet." By submitting cost or pricing data, the Contractor grants to the Contracting Officer or an authorizing representative the right to examine those books, records, documents and other supporting data that will permit evaluation of the proposed equipment costs. After price agreement the Contractor shall certify that the equipment costs or pricing data submitted are accurate, complete and current.

16. ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows:

Add the following sentence to paragraph "g" of basic contract clause, SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (1984 APR):

"Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted."

Alt.1 (APR 1984) (FAR 52.236-21) (7-602.54 (b) (1) OCT 1976)

17. AVAILABILITY AND USE OF UTILITY SERVICES (APR 1984)

a. The Government shall make all reasonable amounts of domestic water and electricity available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the Government shall pay for the amount of each utility service consumed. The Contractor shall carefully conserve any utilities furnished without charge. When necessary, the Government may shutdown these utilities at any time, including weekends, with little or no notice to the Contractor.

b. The Contractor, at its expense and in a workmanlike manner satisfactory to the Contracting Officer Representative, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used. The Contractor shall furnish to the Contracting Officer Representative a complete system layout drawing showing type of materials to be used and method of installation for all temporary electrical systems. The Contractor shall make arrangements with the Using Service, through the Contracting Officer Representative, as to the method of determining the amount of water and electricity to be used by him. Telephone service is the responsibility of the Contractor, and shall be coordinated with the Contracting Officer Representative and the local communication company. The Contractor shall maintain all temporary lines in a workmanlike manner satisfactory to the Contracting Officer Representative. Before final acceptance of the work by the Government, the Contractor shall remove all temporary connections, distribution lines, meters and associated paraphernalia. (FAR 52.236-14). The Government will furnish normal quantities of electricity and water used to make final tests of completely installed systems.

c. Utility Service Interruptions. The Contractor shall submit written notification not less than 15 calendar days in advance of each interruption of each utility and communication service to or within existing buildings and facilities being used by others. No single

outage will exceed 4 hours unless approved in writing. The time and duration of all outages will be coordinated with the Using Agency by the Contracting Officer Representative.

d. Digging Permits and Road Closings. The Contractor shall allow 14 calendar days from date of written application to receive permission to dig and to close roads. Roads shall only be closed one lane at a time, and vehicular traffic shall be allowed to pass through the construction area. Work on or near roadways shall be flagged in accordance with the safety requirements in Safety and Health Requirements Manual EM 385-1-1, which forms a part of these specifications. Work located along the alert force route shall not cause blockage, and the Contractor shall maintain unobstructed access for alert force traffic at all times.

e. Compressed air is not available for Contractor use. The Contractor will supply at his expense, air compressors, as required.

f. Contractor is not allowed to use any McGuire AFB sanitary facilities (lavatories, rest rooms, sanitary sewers, etc.). Contractor shall supply, at his expense, chemical toilets, washrooms, etc., as required.

18. SALVAGE MATERIALS AND EQUIPMENT

The Contractor shall maintain adequate property control records for all materials or equipment specified to be salvaged. These records may be in accordance with the Contractor's system of property control, if approved by the property administrator. The Contractor shall be responsible for the adequate storage and protection of all salvaged materials and equipment and shall replace, at no cost to the Government, all salvage materials and equipment which are broken or damaged during salvage operations as the result of his negligence, or while in his care. (DoD FAR Supplement 52.236-7005)

19. CONSTRUCTION PROJECT SIGNS

The Contractor shall construct two signs; one for project identification and the other to show on-the-job safety performance.

a. Sample sign drawings together with mounting and fabrication details are provided at the end of this section. NOTE: The signs, if directed by the Contracting Officer, shall be frangibly mounted, i.e. the posts and braces should be constructed to easily break away from a base, or as otherwise directed by the COR. The signs shall be erected as soon as possible and within 15 calendar days after the date of Notice to Proceed.

b. The two signs are to be displayed side by side and mounted for reading by passing viewers. Exact placement location will be designated by the Contracting Officer.

c. Panels are fabricated using HDO (High-Density Overlay) plywood with dimensional lumber uprights and bracing. The sign faces are non-reflective vinyl.

d. All legends are to be die-cut or computer-out in the sizes and type-faces specified and applied to the white panel background following the graphic formats shown on the attached sheets. The Communications Red panel on the left side of the construction project sign with Corps signature (reverse version) is screen printed onto the white background.

e. No separate payment will be made for erecting and maintaining the signs and all costs in connection therewith will be considered the obligation of the Contractor. Upon completion of the project, the Contractor shall remove the signs from the work area.

f. The Contracting Officer may alter the colors indicated herein for the background and lettering to agree with current sign standards in use at McGuire AFB. The Contractor shall alter the colors as directed by the Contracting Officer at no additional cost to the Government.

20. LABOR SURPLUS AREA EXPENDITURE REQUIREMENTS (JUL 1978)

a. The site of the construction work is located in an area determined by the Secretary of Labor to be a Labor surplus Area. Accordingly the Contractor hereby agrees to perform a substantial portion of the contract work in this or in any other labor surplus area. "Substantial portion" means the aggregate costs that will be incurred by the Contractor and his first-tier subcontractors and suppliers, on account of manufacturing, production, or services performed in this or any labor surplus area, and the costs that will be incurred by second-tier and lower-tier subcontractors on the construction site will exceed fifty percent (50%) of the price of this contract.

b. Upon request, the Contractor shall furnish to the Contracting Officer data to substantiate that this obligation is satisfied.

c. The Contracting Officer will furnish upon request a list of labor surplus areas.

21. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

a. This provision specifies the procedure for determination of time extension for unusually severe weather in accordance with the contract clause entitled "Default: (Fixed Price Construction)." In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied:

1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

2. The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

b. The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress

schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY
WORK DAYS BASED ON (5) DAY WORK WEEK

| JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| (9) | (7) | (8) | (8) | (7) | (7) | (6) | (7) | (5) | (7) | (5) | (7) |

c. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day. The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), be calculated chronologically from the first to the last day of each month, and be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph 2 above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and issue a modification in accordance with the contract clause entitled "Default (Fixed Price Construction)". (ER 415-1-5) (31 Oct 89)

22. SCHEDULING AND DETERMINATION OF PROGRESS

Pursuant to the contract clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, the Contractor shall prepare and submit for approval a practicable project schedule. The type of schedule and detailed requirements as well as timing of this submittal shall be as specified in specification section 'PROJECT SCHEDULE'.

This schedule will be the medium through which the timeliness of the Contractor's construction effort is appraised. When changes are authorized that result in contract time extensions, Contractor shall submit a modified schedule for approval by the Contracting Officer.

The terms of Contract Clause, SCHEDULING FOR CONSTRUCTION CONTRACTS, with reference to overtime, extra shifts, etc., may be invoked when the Contractor fails to start or complete work features or portions of same by the time indicated by the milestones dates on the approved project schedule, or when it is apparent to the Contracting Officer from the Contractor's actual progress that these dates will not be met.

Neither on the project schedule as originally submitted nor on any updated periodic schedules which the Contractor is required to prepare and submit, shall be actual progress to be entered include or reflect any materials which even though on the site, are not yet installed or incorporated in the work. For payment purposes only, an allowance will be made by the Contracting Officer of up to 100 percent of the invoiced cost of materials or equipment delivered to the site but not incorporated into the construction, pursuant to Contract Clause, PAYMENT UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. The making of such an allowance will be contingent upon a determination by the Contracting

Officer that the Contractor's compliance with the quality control requirements of the contract is more than satisfactory.

23. IDENTIFICATION OF EMPLOYEES

The Contractor shall be responsible for furnishing to each employee and for requiring each employee engaged on the work to display such identification as may be approved and directed by the Contracting Officer. All prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon the release of any employees. When required by the Contracting Officer, the Contractor shall obtain and submit finger-prints of all persons employed or to be employed on the project. (DOD FAR Supplement 52.236-7007)

24. EXCLUSION OF PERIODS IN COMPUTING COMPLETION SCHEDULES (JAN 1965)

No work will be required during the period between 01 Jan 2001 and 28 Feb 2001 and inclusive and such period has not been considered in computing the time allowed for completion. The Contractor may, however, perform work during all or any part of this period upon giving prior written notice to the Contracting Officer. If the work performed during such period is less than the average monthly work necessary to complete the contract within the time specified and the Contracting Officer maintains an inspection force during this period to inspect the work, the Contractor will be charged the percentage of the cost of maintaining such force that his work is less than the average monthly work necessary to complete the contract within the time specified. (DOD FAR Supplement 52.212-7000)

25. QUANTITY SURVEYS (APR 1984)

- a. Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.
- b. The Contractor shall conduct the original and final surveys for any periods for which progress payments are requested. All these surveys shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement in a specific instance. The Government shall make such computations as are necessary to determine the quantities of work performed or finally in place. The Contractor shall make the computations based on the surveys for any periods for which progress payments are requested.
- c. Promptly upon completion a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer. (FAR 52.236-16)

26. TIME EXTENSIONS (APR 1984)

Notwithstanding any other provisions of this contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent, if any, by which the changes cause delay in the

completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule. (FAR 52.212-6)

27. SUPERINTENDENCE OF SUBCONTRACTORS (JAN 1965)

a. The Contractor shall be required to furnish the following, in addition to the superintendence required by the Contract Clause titled, 'SUPERINTENDENCE BY THE CONTRACTOR.'

(1) If more than 50% and less than 70% of the value of the contract work is subcontracted, one superintendent shall be provided at the site and on the Contractor's payroll to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

(2) If 70% or more of the value of the work is subcontracted, the Contractor shall be required to furnish two such superintendents to be responsible for coordinating, directing, inspecting and expediting the subcontract work.

b. If the Contracting Officer, at any time after 50% of the subcontracted work has been completed, finds that satisfactory requirement is being made, he may waive all or part of the above requirement for additional superintendence subject to the right of the Contracting Officer to reinstate such requirement if at any time during the progress of the remaining work he finds that satisfactory progress is not being made. (DOD FAR Supplement 52.236-7008)

28. PROCEDURES FOR SUBMISSION AND PAYMENT OF ALL CONTRACT PAYMENTS

In addition to the requirements contained in the Contract Clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS" and to implement the requirements of the Prompt Payment Act Amendments of 1988, P.L. 100-496, the following shall apply to all payments made under this contract:

a. At the time of submission of the progress chart, the Contractor shall submit for approval by the Contracting Officer or his authorized representative a breakdown of the contract work which shall be to the degree of detail required by the Contracting Officer, or his representative, to effect reasonable progress payments. The Contracting Officer, or his representative, shall review this breakdown within 30 calendar days after receipt and either advise the Contractor that it is approved or disapproved, and if disapproved the reasons for disapproval. Only after the breakdown is approved shall any payment invoice be accepted from the Contractor and any payment made to him. The Contracting Officer can determine if it is in the best interest of the Government to make payment without an approved breakdown; however, in no case shall more than 10% of the contract amount be paid unless the breakdown is approved.

b. The Contractor shall submit his request for payment by submission of a proper invoice to the office or person(s) designated in subparagraph c. For purposes of payment a "proper invoice" is defined as the following:

1. An estimate of the work completed in accordance with the approved breakdown indicating the percentage of work of each item and the associated costs.

2. A properly completed Eng Form 93 and 93a (where required).

3. All contractual submissions indicated elsewhere in this contract to be submitted with payment, such as updated progress schedules, updated submittal registers, etc.

4. The following certification executed by a responsible official of the organization authorized to bind the firm. A "responsible official" would be a corporate officer, partner, or owner, in the case of a sole proprietorship.

"I hereby certify, to the best of my knowledge and belief, that -

(a) The amounts requested are only for performance in accordance with the specifications, terms and conditions of the contract;

(b) Payments to subcontractors and suppliers have been made from previous payments received under the contract and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract requirements and the requirements of Chapter 39 of Title 31, United States Code; and

(c) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

(d) All required prime and subcontractor payrolls have been submitted.

(Name)

(Title)

(Date)"

c. The Government shall designate the office or person(s) who shall first receive the invoice submissions and the Contractor shall be so notified at the pre-construction conference. In addition to the designated Project Engineer, the Contractor shall at the same time submit one copy of the detailed breakdown and the Eng Form 93 and 93a Form to the Area Engineer.

d. The Government representative shall return any request for payment which is deemed defective within 7 days of receipt and shall specify the defects. If the defect concerns a disagreement as to the amount of work performed and or the amount of the payment being submitted, the

Government and the Contractor's representative should meet to resolve the difference and reach agreement. Upon agreement, the Contractor shall submit a new breakdown and Eng Form 93 (and 93a) and any other submissions requiring correction. These will be incorporated with the previous submittal and will then constitute a proper invoice.

e. If agreement cannot be reached, the Government shall determine the proper amount per Contract Clause, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS and process the payment accordingly. In this event, a "proper invoice" for Prompt Payment Act purposes will not have been submitted to the Government.

f. The Government shall pay the Contractor in accordance with the following time frames:

(1) Progress Payments. From the date a "proper invoice" is received, in accordance with subparagraphs b and d of this clause, the Government will issue a check with 14 calendar days.

(2) Reduction in Retainage Payment. If during the course of the contract, a reduction in retainage payment is required, the Government shall issue a check within 14 calendar days after the approval of the release to the Contractor by the Contracting Officer or his authorized representative.

(3) Final Payment. A final payment request shall not be considered valid until the Contractor has fulfilled all contract requirements including all administrative items, payrolls, warranties, etc. and has submitted a release of claims. When the Contractor has fulfilled all contract requirements and a "proper invoice" has been submitted, the Government shall issue a check within 14 days from the date of acceptance of the project by the Contracting Officer.

29. VERIFICATION OF SMALL BUSINESS UTILIZATION

a. This clause is applicable to small business concerns whose contracts exceed \$1,000,000.

b. In accordance with the clause at FAR 52.219-8, entitled UTILIZATION OF SMALL BUSINESS CONCERNS AND DISADVANTAGED BUSINESS CONCERNS, in effect on the date of this contract, the Contracting Office may survey the extent of small and small disadvantaged business utilization under this contract. The Contractor may be required to report to the Contracting Officer statistical data on the number and dollars amounts of subcontracting awards with small business and small disadvantaged businesses.

c. As appropriate, the Contracting Officer may require one or more follow-up reports to the initial report.

d. The Contractor agrees to insert this clause in any subcontract that may exceed \$1,000,000, including this subparagraph d.

30. HAZARDOUS MATERIAL IDENTIFICATION & MATERIAL SAFETY DATA (NOV 1991)

a. Hazardous material, as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract.)

b. The bidder must list any hazardous material, as defined in paragraph a. of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (if none, insert NONE)

Identification No.

c. The apparently successful bidder, by acceptance of the contract, certifies that the list in paragraph b of this clause is complete. This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

d. The apparently successful bidder agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material, identified in paragraph b of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful bidder is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful bidder being considered nonresponsible and ineligible for award.

e. If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph d of this clause or the certification submitted under paragraph c of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

f. Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

g. Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes,

ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

h. The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to -

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting or disposing of hazardous materials.

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have other use, duplicate, and disclose the data for the Government for these purposes

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources. (FAR 52.223-3)

31. SAFETY AND HEALTH REQUIREMENTS MANUAL

If this contract is for construction or dismantling, demolition, or removal of improvements with any Department of Army agency or component, the Contractor shall comply with all pertinent provisions of the latest version of U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, in effect on the date of the solicitation. The latest edition of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, as referenced in the Accident Prevention clause of Section 00700 CONTRACT CLAUSES, is dated 2 SEP 1996.

Before commencing the work, the Contractor shall: (1) Submit a written proposal for implementing the Accident Prevention Plan; and (2) Meet with representatives of the Contracting Officer to discuss and develop a mutual understanding relative to administration of the overall safety program.

32. SPECIAL SCHEDULING REQUIREMENTS FOR MECHANICAL AND ELECTRICAL SYSTEMS

In reference to the contract clause entitled "PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS", see Section 01451 CONTRACTOR QUALITY CONTROL for additional scheduling requirements for such systems.

33. SUBMISSION OF CLAIMS

The following shall be submitted to the Contracting Division at the following address: U.S. Army Corps of Engineers, New York District, 26 Federal Plaza, New York, New York 10278-0090:

- a. claims referencing or mentioning the Contracting Disputes Act of 1978
- b. Requests for a written decision by the Contracting Officer
- c. Claims certified in accordance with the Contract Disputes Act of 1978

No other Government representative is authorized to accept such requests. A copy shall also be provided to the Authorized Representative of the Contracting Officer.

The Contractor shall also provide the Contracting Officer with a copy of any requests for additional time, money or interpretation of contract requirements which were provided to the Authorized Representative of the Contracting Officer and which have not been resolved after 90 days.

34. PRECONSTRUCTION CONFERENCE

a. A preconstruction conference will be arranged by the Contracting Officer, or his Representative, after award of contract and before commencement of work. The Contracting Officer's representative will notify the Contractor of the time and date set for the meeting. At this conference, the Contractor shall be oriented with respect to Government procedures and line of authority, contractual, administrative, and construction matters. Additionally, a schedule of required submittals will be discussed.

b. The Contractor shall bring to this conference the following items in either completed or draft form:

- The Contractor's order of work
- Accident Prevention Plan
- Quality Control Plan
- Letter appointing Superintendent
- List of subcontractors.

35. GOVERNMENT RESIDENT MANAGEMENT SYSTEM AND CONTRACTOR QUALITY CONTROL MODULE

a. The Government will utilize an in-house Contract Administration program entitled "Resident Management System" (R.MS). The Contractor shall utilize a Government furnished CQC Programming Module. The following hardware and software are needed by the contractor to run RMS; A personal computer with Pentium II Processor (or higher) and 32 megabytes (MB) or more of random access memory (RAM), 4.0 gigabytes (GB) hard drive disk space for sole use of CQC Module, and a 3-1/2 inch high density floppy drive, Compact Disk (CD) Reader. Also needed is a HP Laser Jet III Series or better printer, a color monitor, Windows 95 or later, MS Office (Microsoft Word 97 or newer, Access 97 or newer) and computer files - 120. Connection to the Internet, minimum 28 BPS. Electronic Email compatible with MS Outlook- The contractor's computer system shall be protected by virus protection software that is regularly upgraded with all issued manufacturer's updates throughout the life of the contract.

b. The Module includes a Daily CQC Reporting System form, which must also be used. This form may be in addition to other contractor desired reporting forms. However, all other such reporting forms shall be consolidated this one Government specified Daily CQC Report Form. The Contractor will also be required to complete CQC Module elements which include, but are not limited to, all Contractor Quality Control plan information such as; Prime Contractor staffing, subcontractor information showing trade, name, address, and point of contact, definable features of work, pay activities and activity information, required Quality Control tests tied to individual pay activities, planned User schooling tied to specific specification paragraphs and pay activities, Installed Property listings, Transfer Property listings, and submittal information relating to specification section, description, pay activity, and expected procurement period. The sum of all pay activities shall equal the contract amount, and all Bid Items, the Option shall be separately identified, in accordance with the Bidding Schedule. Bid Items may include multiple activities, but activities may only be assigned to one such Bid Item. This module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment (except for Bonds, and Insurance, as approved by the Contracting Officer) and shall be updated as required.

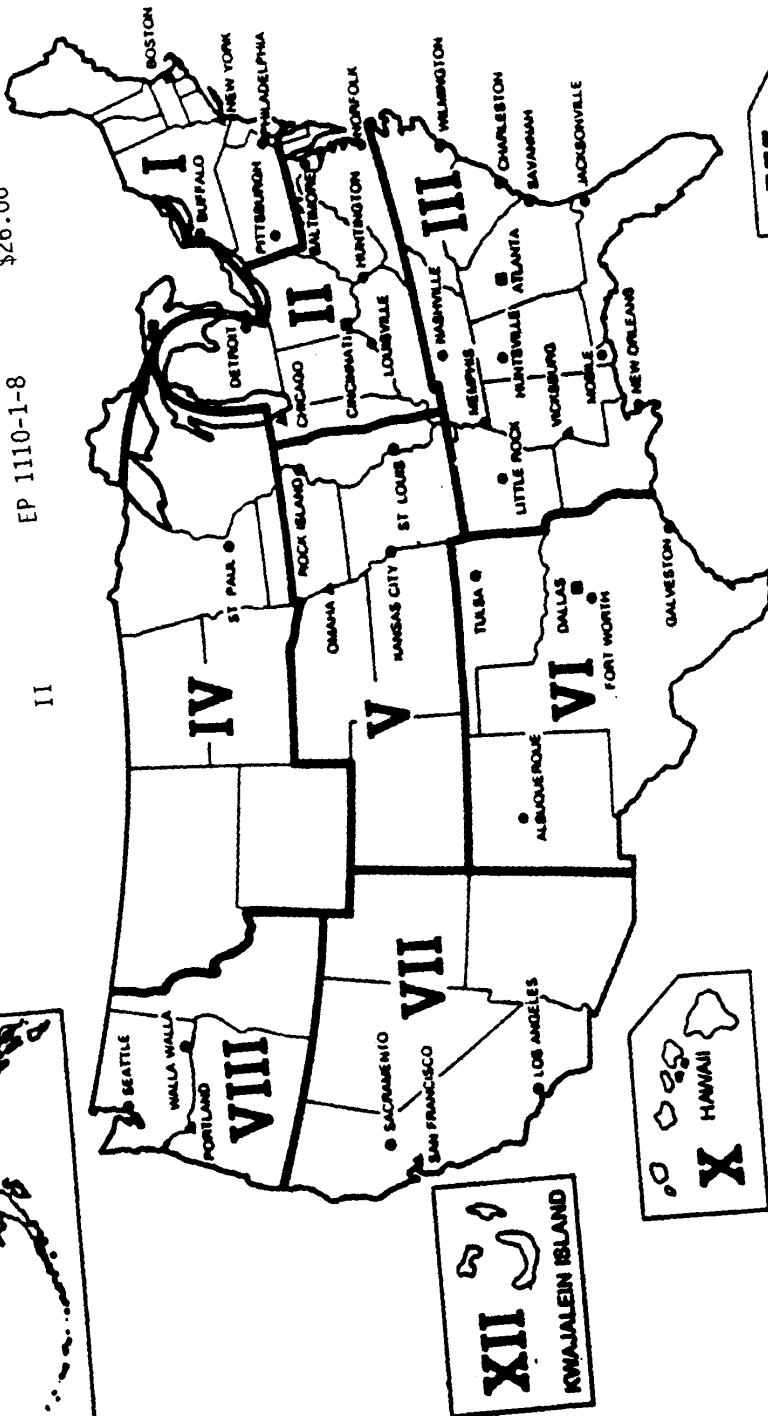
c. During the course of the contract, the contractor will receive various Quality Assurance comments from the Government that will reflect corrections needed to contractor activities or reflect outstanding or future items needing attention of the contractor. The contractor will acknowledge receipt of these *comments* by specific number reference on his daily COC report, and will also reflect on his daily CQC report when these items are specifically completed or corrected to permit Government verification.

-- End of Special Clauses --

Regions for the Construction Equipment Ownership and Operating Expense Schedule



| Vol. No. | Stock No. | Cost |
|----------|-------------|---------|
| I | EP 1110-1-8 | \$26.00 |
| II | EP 1110-1-8 | \$26.00 |

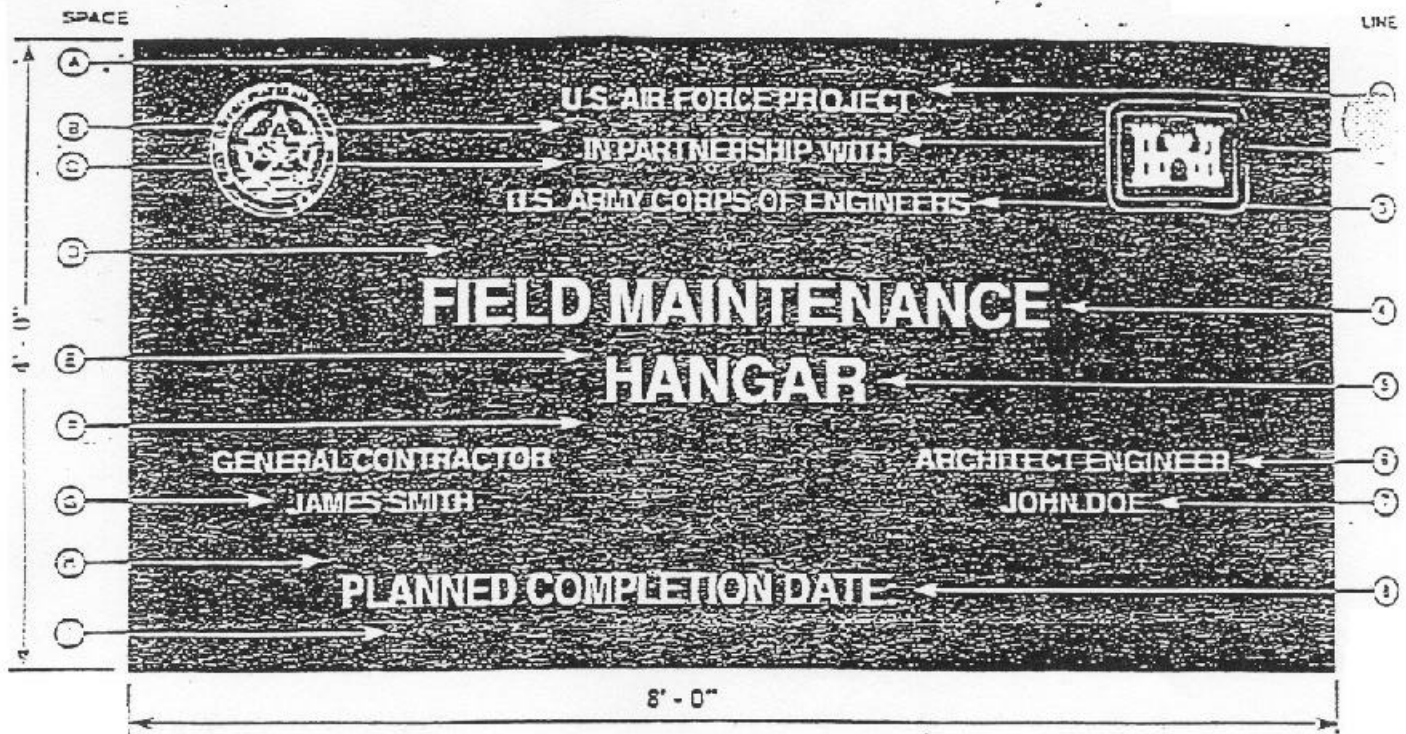


Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954

Phone: 202-512-1800

Copies of Schedule available from:

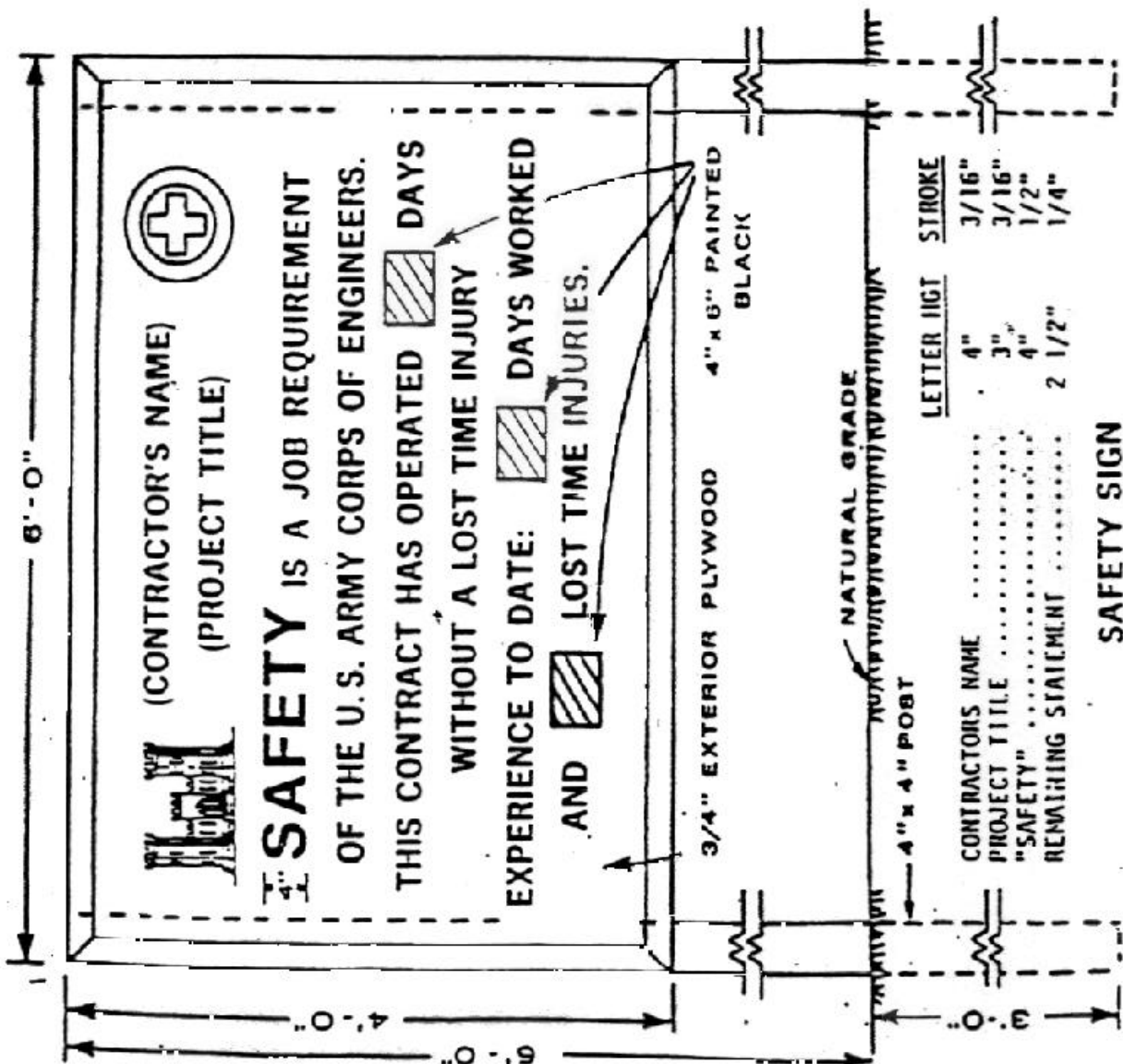
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SAMPLE CONSTRUCTION SIGN FOR MILCON PROJECTS

SCHEDULE

| SPACE | HEIGHT | LINE | DESCRIPTION | LETTER HEIGHT | STROKE |
|-------|--------|------|-----------------------------------|---------------|--------|
| A | 3" | 1 | U.S. AIR FORCE PROJECT | 1.5" | |
| B | 1" | 2 | IN PARTNERSHIP WITH | 1.5" | |
| C | 1" | 3 | U.S. ARMY CORPS OF ENGINEERS | 1.5" | |
| D | 5" | 4 | PROJECT NAME | 4" | |
| E | 3" | 5 | PROJECT NAME CONT'D (IF REQUIRED) | 4" | 1/2" |
| F | 5" | 6 | GENERAL CONTRACTOR/A-E | 1.5" | 3/16" |
| G | 1" | 7 | GENERAL CONTRACTOR /A-E | 1.5" | 3/16" |
| H | 4" | 8 | PLANNED COMPLETION DATE | 2.5" | |
| I | 5" | | | | |



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SECTION 00805

CONTRACT ADMINISTRATION DATA

G.1 ACCOUNTING AND APPROPRIATION DATA:
TO BE FURNISHED AT TIME OF AWARD

G.2 CONTRACT ADMINISTRATION IS RETAINED BY THE CONTRACTING OFFICER:

US Army Engineer District, Philadelphia
ATTN: CENAP-CT-C (Jennifer McGivern)
Wanamaker Building, 100 Penn Square East
Philadelphia, Pennsylvania 19107-3390
(215) 656-6773

G.3 PAYMENT BY:

US Army Corps of Engineers Finance Center
5722 Integrity Drive
Millington, TN 38054-5005

G.4 BILLING ADDRESS:

Invoices shall be forwarded as follows:

US Army Corps of Engineers, New York District
McGuire Resident Office
2404 Tuskegee Airman Avenue
McGuire AFB, NJ 08641
ATTN: Paul Jalowski

G.5 TECHNICAL INQUIRIES:

All technical inquiries should be directed to:
Pre-Award: Norm Hubler (215) 656-6693

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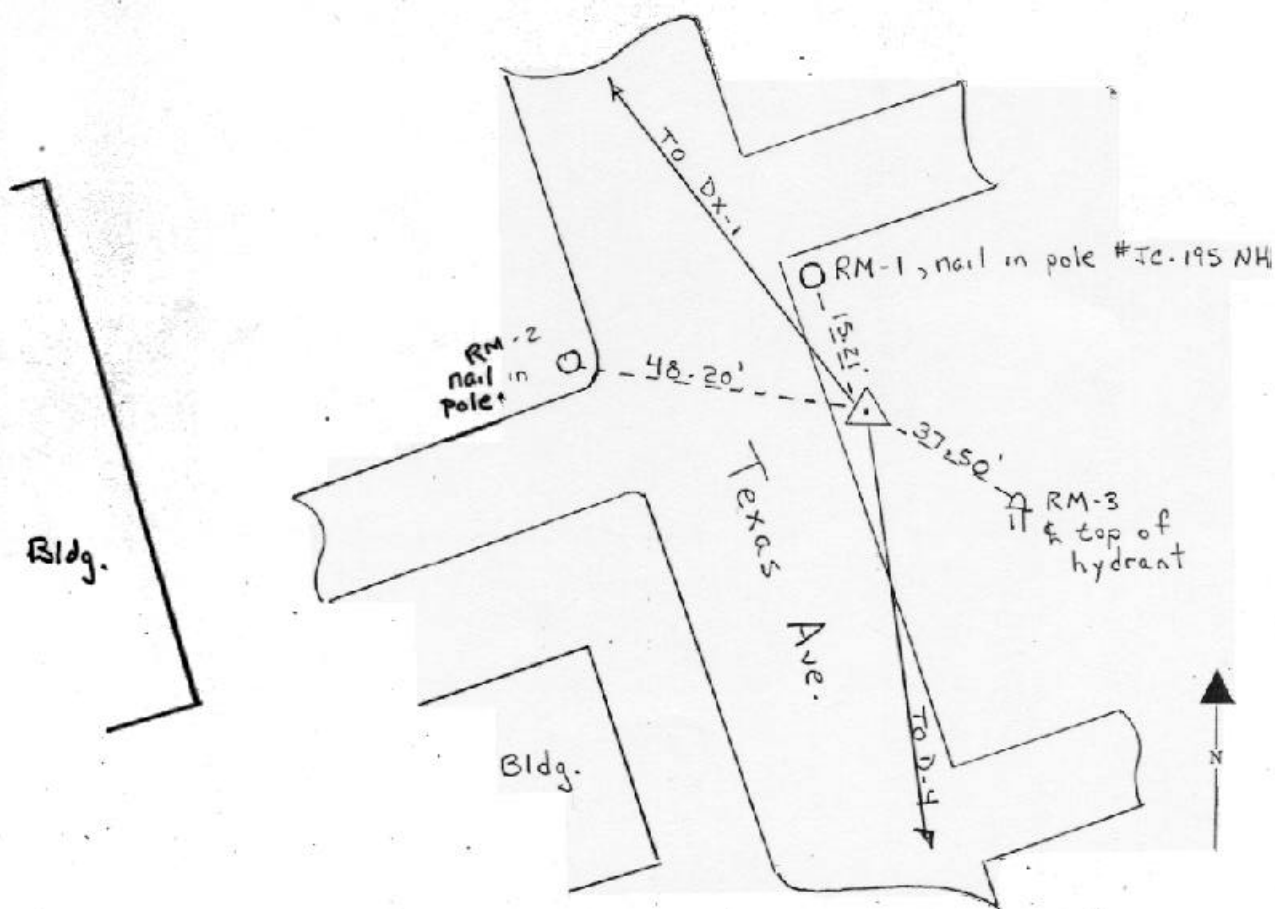
SURVEY CONTROLS

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| | | | |
|---|---|--|---------------------------------------|
| COUNTRY US | TYPE OF MARK Standard Disk | STATION D-5 | |
| LOCALITY Fort Dix, NJ | STAMPING ON MARK D-5 1982 | AGENCY (CAST IN MARKS) Corps of Engineers | ELEVATION (FT) 133.74 |
| LATITUDE 40 01' 0.822" | LONGITUDE 74 36' 43.191" | DATUM NAD 1927 | DATUM NAVD 88 |
| (NORTHING) (EASTING) (FT) 431737.193 | (EASTING) (NORTHING) (FT) 460870.975 | GRID AND ZONE NTPG NAD 83 | ESTABLISHED BY (AGENCY) ADR Assoc. |
| (NORTHING) (EASTING) (FT) (M) | (EASTING) (NORTHING) (FT) (M) | GRID AND ZONE | DATE Nov. 1982 |
| | | | ORDER 2nd |

| TO OBTAIN | | | | |
|-------------------------|---|---------|--------------|-----------------------------------|
| TO OBTAIN | | | | |
| GRID AZ. (ADD) (SUB.) | | | | |
| TO THE GEODETIC AZIMUTH | | | | |
| OBJECT | AZIMUTH OR DIRECTION (GEODETIC) (GRID) (MAGNETIC) | | BACK AZIMUTH | GEOD. DISTANCE (METERS) (FEET) |
| D-4 | 335 | 18 43.0 | | |
| | | | | |
| | | | | |
| | | | | 48.20 |
| RM-3 | | | | 37.50 |

Monument D-5 is a standard disk set in concrete flush with the ground on the east side of Texas Ave. 1.15 miles North of Pointville Rd.



SKETCH

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The NGS Data Sheet

DATABASE = Sybase ,PROGRAM = datasheet, VERSION = 5.84

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = JUNE 10, 1999

AA9238 *****

AA9238 CBN - This is a Cooperative Base Network Control Station.

AA9238 PACS - This is a Primary Airport Control Station.

AA9238 DESIGNATION - MAFB 2

AA9238 PID - AA9238

AA9238 STATE/COUNTY- NJ/BURLINGTON

AA9238 USGS QUAD - NEW EGYPT (1972)

AA9238

AA9238 *CURRENT SURVEY CONTROL

AA9238

AA9238* NAD 83(1992)- 40 01 28.37861(N) 074 36 14.22621(W) ADJUSTED

AA9238* NAVD 88 - 36.72 (meters) 120.5 (feet) GPS OBS

AA9238

AA9238 X - 1,298,498.665 (meters) COMP

AA9238 Y - -4,715,439.961 (meters) COMP

AA9238 Z - 4,080,076.074 (meters) COMP

AA9238 LAPLACE CORR- 0.48 (seconds) DEFLEC96

AA9238 ELLIP HEIGHT- 4.27 (meters) GPS OBS

AA9238 GEOID HEIGHT- -32.52 (meters) GEOID96

AA9238

AA9238 HORZ ORDER - B

AA9238 ELLP ORDER - FOURTH CLASS I

AA9238

AA9238.This mark is at McGuire Afb Airport (WRI)

AA9238

AA9238.The horizontal coordinates were established by GPS observations

AA9238.and adjusted by the National Geodetic Survey in March 1998.

AA9238

AA9238.The orthometric height was determined by GPS observations.

AA9238

AA9238.GPS derived orthometric heights for airport stations designated as

AA9238.PACS or SACS are published to 2 decimal places. This maintains

AA9238.centimeter relative accuracy between the PACS and SACS. It does

AA9238.not indicate centimeter accuracy relative to other marks which are

AA9238.part of the NAVD 88 network.

AA9238

AA9238.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AA9238

AA9238.The Laplace correction was computed from DEFLEC96 derived deflections.

AA9238

AA9238.The ellipsoidal height was determined by GPS observations

AA9238.and is referenced to NAD 83.

AA9238

AA9238.The geoid height was determined by GEOID96.

AA9238

AA9238; North East Units Scale Converq.

AA9238;SPC NJ - 132,245.175 141,127.228 MT 0.99990097 -0 04 00.7

AA9238;UTM 18 - 4,430,557.108 533,794.499 MT 0.99961406 +0 15 16.9

AA9238

AA9238: Primary Azimuth Mark Grid Az

AA9238:SPC NJ - MAFB 3 108 58 56.9

AA9238:UTM 18 - MAFB 3 108 39 39.3

AA9238

AA9238|-----|

AA9238| PID Reference Object Distance Geod. Az

AA9238| dddmmss.s

AA9238| AA9239 MAFB 3 APPROX. 1.1 KM 1085456.2

AA9238|-----|
 AA9238
 AA9238 SUPERSEDED SURVEY CONTROL
 AA9238
 AA9238 NAD 83(1993)- 40 01 28.37858(N) 074 36 14.22618(W) AD() B
 AA9238 ELLIP HT - 4.27 (m) GP() 1 1
 AA9238

AA9238.Superseded values are not recommended for survey control.
 AA9238.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 AA9238.See file dsdata.txt to determine how the superseded data were derived.
 AA9238

AA9238_MARKER: DD = SURVEY DISK
 AA9238_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 AA9238_STAMPING: MAFB 2 1994
 AA9238_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO
 AA9238+STABILITY: SURFACE MOTION
 AA9238_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
 AA9238+SATELLITE: SATELLITE OBSERVATIONS - December 12, 1996
 AA9238

| HISTORY | - Date | Condition | Recov. By |
|----------------|------------|------------|-----------|
| AA9238 HISTORY | - 1994 | MONUMENTED | USE |
| AA9238 HISTORY | - 19940814 | GOOD | NGS |
| AA9238 HISTORY | - 19961212 | GOOD | NJGS |

AA9238 STATION DESCRIPTION

AA9238'DESCRIBED BY NATIONAL GEODETIC SURVEY 1994 (SER)
 AA9238'THE STATION IS LOCATED ABOUT 2.0 MI (3.2 KM) EAST OF WRIGHTSTOWN, AT
 AA9238'THE MCGUIRE AIR FORCE BASE, ABOUT 300 FT (91.4 M) WEST FROM RUNWAY 18
 AA9238'AND 166 FT (50.6 M) SOUTH FROM SIERRA TAXIWAY AND 0.9 MI (1.4 KM)
 AA9238'NORTHWEST OF THE INFIELD ACCESS ROAD. OWNERSHIP--U.S. AIR FORCE. 438
 AA9238'OSS/OSFA MCGUIRE AFB, NJ 08641. CONTACT LESLIE HARTON, CHIEF,
 AA9238'AIRFIELD MANAGEMENT. PHONE 609-724-6466.
 AA9238'

AA9238'TO REACH THE AIRFIELD FROM THE JUNCTION OF PEMBERTON-WRIGHTSTOWN ROAD
 AA9238'AND WRIGHTSTOWN-COOKSTOWN ROAD IN WRIGHTSTOWN, GO EAST ON
 AA9238'WRIGHTSTOWN-COOKSTOWN ROAD 1.5 MI (2.4 KM) TO MCGUIRE AFB ON THE
 AA9238'RIGHT. TURN RIGHT AND GO SOUTH ON MCGUIRE BLVD FOR 0.7 MI TO A T
 AA9238'INTERSECTION. TURN LEFT AND GO 0.1 MI (0.2 KM) TO BASE OPERATIONS ON
 AA9238'THE LEFT AND THE AIRSTRIP ON THE RIGHT.
 AA9238'

AA9238'LOCATED 306.1 FT (93.3 M) WEST FROM WEST EDGE OF RUNWAY 18, 221.5
 AA9238'NORTHEAST FROM WEATHER STATION, 166.8 FT (50.8 M) SOUTH FROM SOUTH
 AA9238'EDGE OF TAXIWAY SIERRA.
 AA9238

AA9238 STATION RECOVERY (1996)

AA9238'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1996 (FAC)
 AA9238'RECOVERED AS DESCRIBED WITH A COMPLETE NEW DESCRIPTION TO FOLLOW. THE
 AA9238'STATION IS LOCATED ABOUT 1.2 MI (1.9 KM) SOUTHEAST FROM WRIGHTSTOWN,
 AA9238'2.7 MI (4.3 KM) SOUTHWEST FROM COOKSTOWN AND ABOUT 3.4 MI (5.5 KM)
 AA9238'EAST NORTHEAST FROM JULIUSTOWN, AT THE MCGUIRE AIR FORCE BASE IN A
 AA9238'GRASS AREA BOUNDED BY RUNWAY 18, TAXIWAY SIERRA, TAXIWAY GOLF AND
 AA9238'TAXIWAY HOTEL AT THE NORTHWEST PART OF THE AIR FORCE BASE. THE BASE
 AA9238'IS OWNED BY THE U.S. GOVERNMENT. PERMISSION TO OCCUPY THE STATION
 AA9238'SHOULD BE OBTAINED FROM MR. LESLIE HARTON, CHIEF, AIRPORT MANAGEMENT,
 AA9238'305 OSS/OSFA, MCGUIRE AIR FORCE BASE, NEW JERSEY 08641, PHONE 609 724
 AA9238'6466 OR 609 724 7212. TO REACH THE STATION FROM THE INTERSECTION OF
 AA9238'COUNTY ROAD 537 AND COUNTY ROAD 545 IN TILGHMANS CORNER, GO SOUTHEAST
 AA9238'ON COUNTY ROAD 545 FOR 0.35 MI (0.56 KM) TO A FORK IN THE ROAD. TAKE
 AA9238'THE LEFT FORK AND CONTINUE SOUTHEAST ON COUNTY ROAD 545 SPUR, ALSO
 AA9238'KNOWN AS COUNTY ROAD 680 FOR 2.6 MI (4.2 KM) TO THE INTERSECTION WITH
 AA9238'WRIGHTSTOWN COOKSTOWN ROAD AND MCGUIRE BOULEVARD AT THE MAIN ENTRANCE
 AA9238'TO THE AIR BASE. PASS THROUGH GUARD CHECKPOINT AND CONTINUE SOUTH ON

AA9238'MCGUIRE BOULEVARD, PASSING THROUGH TWO TRAFFICE CIRCLES, THE FIRST
AA9238'CONTAINING A MEMORIAL FOR A WORLD WAR TWO VINTAGE P 38 MILITARY
AA9238'AIRPLANE AND THE SECOND ONE CONTAINING A C 54 MILITARY AIR TRANSPORT,
AA9238'FOR 0.9 MI (1.4 KM) TO THE TEE JUNCTION WITH VANDENBURG AVENUE. TURN
AA9238'LEFT AND GO EAST ON VANDENBURG AVENUE FOR 0.1 MI (0.2 KM) TO BASE
AA9238'OPERATIONS ON THE LEFT. PERSONNEL FROM BASE OPERATIONS WILL PROVIDE
AA9238'MILITARY ESCORT TO THE STATION. THE STATION IS 221.3 FT (67.5 M)
AA9238'NORTHEAST FROM A WEATHER STATION, A STEEL POLE WITH THREE GUY WIRES
AA9238'APPROXIMATELY 20 FT (6.1 M) HIGH WITH TWO STATIONARY RED LIGHTS
AA9238'ATTACHED TO TRANSVERSE ARMS, 161.5 FT (49.2 M) SOUTH SOUTHWEST FROM
AA9238'AND PERPENDICULAR TO THE SOUTHWEST EDGE OF PAVING FOR TAXIWAY SIERRA,
AA9238'145.5 FT (44.3 M) SOUTH SOUTHWEST FROM THE CENTER POST FOR A SIGN
AA9238'READING VEHICLES STOP. DO NOT PROCEED BEYOND THIS POINT WITHOUT TOWER
AA9238'CLEARANCE LOCATED AT THE SOUTHWEST EDGE OF TAXIWAY SIERRA, 162.5 FT
AA9238'(49.5 M) FROM AND PERPENDICULAR TO THE SOUTH EDGE OF PAVING OF TAXIWAY
AA9238'GOLF, 161.0 FT (49.1 M) SOUTH FROM AN ELECTRIC UTILITY MANHOLE AT THE
AA9238'SOUTH EDGE OF PAVING AT THE JUNCTION OF TAXIWAYS SIERRA AND GOLF AND
AA9238'251.3 FT (76.6 M) WEST FROM THE CENTER OF A TRIANGULAR SHAPED RUNWAY
AA9238'MARKER WITH THE NUMBER 6 ON THE NORTH FACE AND THE NUMBER 1 ON THE
AA9238'SOUTH FACE AT THE WEST SIDE OF RUNWAY 18. THE STATION IS SET FLUSH
AA9238'WITH THE GROUND.

*** retrieval complete.
Elapsed Time = 00:00:01

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General Decision Number NJ010002

General Decision Number **NJ010002**
Superseded General Decision No. NJ000002

State: New Jersey

Construction Type:
BUILDING
HEAVY
HIGHWAY

County(ies):
ATLANTIC CUMBERLAND OCEAN
BURLINGTON GLOUCESTER SALEM
CAMDEN MERCER
CAPE MAY MONMOUTH

Building (excluding single family homes and apartments up to and including 4 stories), Heavy (does not include the counties of BURLINGTON, CAMDEN, GLOUCESTER, AND SALEM) Highway Construction Projects.

| Modification Number | Publication Date |
|---------------------|------------------|
| 0 | 03/02/2001 |
| 1 | 03/09/2001 |
| 2 | 04/06/2001 |
| 3 | 05/04/2001 |

COUNTY(ies):
ATLANTIC CUMBERLAND OCEAN
BURLINGTON GLOUCESTER SALEM
CAMDEN MERCER
CAPE MAY MONMOUTH

ASBE0014C 05/01/2000

| | Rates | Fringes |
|---|-------|---------|
| BURLINGTON (townships of Edgewater Park, Lumberton, Sampton, Shamong, Tabernacle, Westhampton, & Willingboro), CAMDEN, & GLOUCESTER COUNTIES: | | |

ASBESTOS WORKERS/INSULATORS
(includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems. Also the application of firestopping material, openings and penetrations in walls, floors, ceilings, curtain walls and all lead abatement).

| | | |
|--|-------|-------|
| | 28.12 | 13.74 |
|--|-------|-------|

ASBE0042B 07/15/1999

| | Rates | Fringes |
|------------------|---------|---------|
| DACA61-01-B-0001 | 00820-1 | |

SALEM COUNTY:

| | | |
|------------------|-------|------|
| ASBESTOS WORKERS | 23.99 | 9.89 |
|------------------|-------|------|

ASBE0085A 06/01/1994

| | | |
|---|-------|---------|
| | Rates | Fringes |
| ASBESTOS WORKERS/INSULATORS | | |
| Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems | | |
| ZONE 1 | 20.20 | 6.35 |
| ZONE 2 | 18.30 | 6.825 |

ASBESTOS WORKERS ZONE DEFINITIONS

ZONE 1: ATLANTIC, BURLINGTON (Bass River and Washington Twps.); CAPE MAY, CUMBERLAND AND OCEAN (Eaglewood, Lacy, Little Egg Harbor, Long Beach, Ocean, Stafford, Tuckerton, and Union Twps.) COUNTIES.

ZONE 2: MONMOUTH (Remainder of County)

ASBE0089G 07/01/1999

| | | |
|--|-------|---------|
| | Rates | Fringes |
| BURLINGTON (includes the townships of Bordentown, Burlington, Chesterfield, Easthampton, Florence, Mansfield, Mount Holly, New Hanover, North Hanover, Pembereton, Roebling, Springfield, Wrightstown, & Woodland); MERCER COUNTY; MONMOUTH (includes the townships of Allentown, Blansingburg, Brielle, Englishtown, Farmingdale, Freehold, Howell, Manasquan, Millstone, Roosevelt, Sea Crit, South Belmar, Spring Lake Heights, Upper Freehold, Wall, & West Belmar); & OCEAN (includes the townships of Beachwood, Berkeley, Breton Woods, Brick, Cederwood Park, Dover, Gillford Park, Island Beach, Island Heights, Jackson, Lakehurst, Lakewood, Manchester, New Egypt, Ocean Gate, Pine Beach, Plumstead, South Toms River & Toms River) COUNTIES: | | |

ASBESTOS WORKERS/INSULATORS

| | | |
|---|-------|-------|
| Includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems | 26.89 | 14.46 |
|---|-------|-------|

BOIL0028C 08/01/1999

| | | |
|--------------|-------|---------|
| | Rates | Fringes |
| BOILERMAKERS | 31.15 | 16.05 |

BRNJ0005A 11/01/2000

| | | |
|----------------------------------|---------|---------|
| | Rates | Fringes |
| BRICKLAYERS, STONEMASONS, MARBLE | | |
| DACA61-01-B-0001 | 00820-2 | |

MASONS, CEMENT MASONS, (Excludes
Building Construction for Mercer
County), PLASTERERS, TILE LAYERS,
& TERRAZZO WORKERS

27.85

12.70

CARP0031B 05/01/1997

Rates

Fringes

MERCER COUNTY (Remainder)

CARPENTERS & INSULATORS

26.28

12.34

MILLWRIGHTS

26.28

12.34

CARP0454B 07/01/1999

Rates

Fringes

DOCK BUILDERS & PILEDRIVERMEN

25.00

15.79+A

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday,
Memorial Day, Independence Day, Labor Day, Veteran's
Day, Presidential Election Day, and Thanksgiving Day;
provided employee works any of the 3 days in the 5-day
work week preceeding the holiday and the first work day
after the holiday.

CARP0623A 05/01/1998

Rates

Fringes

ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER
AND SALEM COUNTIES

CARPENTERS, INSULATORS, MILLWRIGHTS

AND SOFT FLOOR LAYERS

27.14

42%+.15

CARP0781A 05/01/1997

Rates

Fringes

MERCER COUNTY (Beginning from the present Post Office in
Lawrenceville to a point Northward through the present "Radio
Site" to the junction of Rosedale Road and Read's Mill Road to
the junction of Pennington and Mount Rose Road to the Somerset
County line, again starting at the present Post Office in
Lawrenceville and Eastward to the junction of Brunswick Pike
and Delaware and Raritan Canal Bridge taking the center of the
Road to CLarksville then South on Providence Line Road to the
Pennsylvania Railroad then East on Dutch Neck North to Grover's
Mills to the Middlesex County Line)

CARPENTERS

27.20

.155+38%

MILLWRIGHTS

27.70

.155+38%

CARP0999B 12/03/1994

Rates

Fringes

CAMDEN, GLOUCESTER AND SALEM COUNTIES

DACA61-01-B-0001

00820-3

| | | |
|---|-------|---------|
| TERRAZZO FINISHERS | 12.93 | 5.05 |
| ----- | | |
| CARP0999C 12/03/1994 | | |
| | Rates | Fringes |
| ATLANTIC AND MONMOUTH COUNTIES: | | |
| TILE FINISHERS | 8.45 | 13% |
| ----- | | |
| CARP0999D 12/03/1994 | | |
| | Rates | Fringes |
| CAMDEN, GLOUCESTER AND SALEM COUNTIES | | |
| TILE FINISHERS | 12.72 | 5.05 |
| ----- | | |
| CARP0999E 12/03/1994 | | |
| | Rates | Fringes |
| CAMDEN, GLOUCESTER AND SALEM COUNTIES | | |
| MARBLE FINISHERS | 12.95 | 5.05 |
| ----- | | |
| CARP1456G 05/01/2000 | | |
| | Rates | Fringes |
| DIVERS | 36.63 | 22.81 |
| DIVER TENDERS | 27.17 | 22.81 |
| ----- | | |
| CARP1456H 05/01/2000 | | |
| | Rates | Fringes |
| MERCER AND MONMOUTH COUNTIES | | |
| DOCK BUILDERS & PILED RIVERMEN | 29.89 | 17.13 |
| ----- | | |
| CARP2018A 05/01/1999 | | |
| | Rates | Fringes |
| OCEAN COUNTY | | |
| CARPENTERS | 27.85 | 42% |
| MILLWRIGHTS | 28.35 | 42% |
| ----- | | |
| CARP2212B 05/01/1999 | | |
| | Rates | Fringes |
| BURLINGTON, MERCER, MONMOUTH AND OCEAN COUNTIES | | |
| SOFT FLOOR LAYERS | 25.75 | 39.73% |
| ----- | | |
| CARP2250A 05/01/1998 | | |
| | Rates | Fringes |
| MONMOUTH COUNTY | | |

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| | | |
|-------------|-------|---------|
| CARPENTERS | 27.14 | 42%+.15 |
| MILLWRIGHTS | 27.64 | 42%+.15 |

ELEC0269D 10/01/2000

| | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

BURLINGTON (Area North of a line following the West and South limits of Burlington Borough from the Delaware River in a Southeasterly direction to the Burlington - Mt Holly Road, South-Southeast along this Road to and including the Town of Mount Holly, East along the Pennsylvania Railroad to and including New Lisbon and continuing along the Pennsylvania Railroad to Ocean County Line), AND MERCER COUNTIES

LINE CONSTRUCTION (EXCEPT RAILROAD WORK):

| | | |
|---|-------|----------|
| Linemen, Cable Splicers, Truck Drivers, Equipment Operators and Technicians | 33.08 | 6.25+29% |
| Groundmen and Winch Operators | 26.46 | 6.25+29% |

ELEC0269E 10/01/2000

| | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

BURLINGTON COUNTY (Area North of a line following the West and South limits of Burlington Borough from the Delaware River in a Southeasterly direction to the Burlington - Mount Holly Road, South-Southeast along this road to and including the Town of Mount Holly, East along the Pennsylvania Railroad to and including New Lisbon and continuing along the Pennsylvania Railroad to the Ocean County Line) AND MERCER COUNTIES

| | | |
|-------------------------------|-------|----------|
| ELECTRICIANS & CABLE SPLICERS | 33.08 | 5.20+28% |
|-------------------------------|-------|----------|

ELEC0351A 10/02/2000

| | Rates | Fringes |
|--|-------|---------|
|--|-------|---------|

ATLANTIC; BURLINGTON (Edgewater park, Delanco, Delran, Cinnaminson, Moorestown, Mount Laurel, Wilingsboro, Hainesport, Lumberton, Medford, Evesham Townships; and the portion of Shamong, Tabernacle, and Woodland Townships North of the Central Railroad of New Jersey Line; and the portion of Burlington, Westhampton, Easthampton, South Hampton and Pemberton Townships South of a line starting at the Delaware River and following the Southern boundary of Burlington Borough to the Burlington - Mount Holly Road, along this road to Mount Holly around but excluding Mount Holly to the Pennsylvania Railroad along the Pennsylvania Line through, but excluding, Pemberton, through but excluding New Lisbon to the Ocean County line and that portion south of the Central Railroad of New Jersey line running through Chatsworth); CAMDEN; CAPE MAY; CUMBERLAND; GLOUCESTER; and SALEM COUNTIES:

| | | |
|-------------------------------|-------|------------|
| ELECTRICIANS & CABLE SPLICERS | 31.87 | 41.23%+.45 |
|-------------------------------|-------|------------|

ELEC0351C 10/02/2000

| | Rates | Fringes |
|---|-------|---------|
| ATLANTIC; BURLINGTON (Edgewater park, Delanco, Delran, Cinnaminson, Moorestown, Mount Laurel, Wilingsboro, Hainesport, Lumberton, Medford, Evesham Townships; and the portion of Shamong, Tabernacle, and Woodland Townships North of the Central Railroad of New Jersey Line; and the portion of Burlington, Westhampton, Easthampton, South Hampton and Pemberton Townships South of a line starting at the Delaware River and following the Southern boundary of Burlington Borough to the Burlington - Mount Holly Road, along this road to Mount Holly around but excluding Mount Holly to the Pennsylvania Railroad along the Pennsylvania Line through, but excluding, Pemberton, through but excluding New Lisbon to the Ocean County line and that portion south of the Central Railroad of New Jersey line running through Chatsworth); CAMDEN; CAPE MAY; CUMBERLAND; GLOUCESTER; and SALEM COUNTIES: | | |

| | | |
|--------------------------------------|-------|------------|
| LINEMAN, HEAVY EQUIPMENT OPERATOR, & | | |
| CABLE SPLICERS | 31.87 | 42.23%+.25 |
| GROUNDMAN | 27.09 | 42.23%+.25 |

ELEC0400A 06/01/1997

| | Rates | Fringes |
|-----------------------------|-------|---------|
| MONMOUTH AND OCEAN COUNTIES | | |

| | | |
|-------------------------------|-------|------------|
| ELECTRICIANS & CABLE SPLICERS | 28.96 | 5.90 + 18% |
|-------------------------------|-------|------------|

ELEC0400B 06/02/1997

| | Rates | Fringes |
|-----------------------------|-------|---------|
| MONMOUTH AND OCEAN COUNTIES | | |

| | | |
|--|-------|-------------|
| LINE CONSTRUCTION (Excluding Railroad construction): | | |
| Lineman, Equipment Operator, | | |
| and Cable Splicer | 28.96 | 18.75%+5.83 |
| Groundman | 27.01 | 18.75%+5.83 |

ELEC0999A 12/03/1994

| | Rates | Fringes |
|---|-------|---------|
| BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MONMOUTH, OCEAN AND SALEM COUNTIES: | | |

| | | |
|------------------------------------|-------|-----|
| LINE CONSTRUCTION (RAILROAD ONLY): | | |
| Linemen | 16.96 | 25% |
| Line Equipment Operator | 16.20 | 25% |
| Groundman Winch Operator | 13.07 | 25% |
| Groundman | 11.06 | 25% |
| Dynamite Man | 14.20 | 25% |
| Street Light Mechanic | 12.97 | 25% |
| Line Equipment Mechanic | 12.90 | 25% |

ELEV0005C 06/19/2000

| | Rates | Fringes |
|------------------|---------|---------|
| DACA61-01-B-0001 | 00820-6 | |

ELEVATOR MECHANICS

33.395

6.935+A

FOOTNOTE:

- A. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day
PAID VACATION: Employer contributes 4% of basic hourly rate as vacation pay credit for 5 years or more of service, and 2% for 6 months to 5 years of service.
-

ENGI0825B 07/01/2000

| | Rates | Fringes |
|---|-------|-----------|
| POWER EQUIPMENT OPERATORS: | | |
| BUILDING CONSTRUCTION PROJECTS; HEAVY; | | |
| HIGHWAY; ROAD; STREET AND SEWER PROJECTS: | | |
| GROUP 1 | 31.12 | 15.65+A+B |
| GROUP 2 | 29.53 | 15.65+A+B |
| GROUP 3 | 27.62 | 15.65+A+B |
| GROUP 4 | 25.99 | 15.65+A+B |
| GROUP 5 | 24.28 | 15.65+A+B |
| GROUP 6 | 32.84 | 15.65+A+B |

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Autograde - Combination Subgrader; base metal spreader and 7 base trimmer (CMI and similar types); autograde placer, trimmer, spreader combination (CMI and similar types); autograde slipform paver (CMI and similar types); backhoe; central power plants (all types); concrete paving machines; cranes (all types, including overhead and straddle traveling type); cranes; gantry; derricks (land or floating); drillmaster, quarrymaster (down the hole drill) rotary drill; self propelled hydraulic drill; self-powered drill; dragline; elevator graders; front end loaders (5 yds. and over); gradalls; grader; raygo; locomotive (large); mucking machines; pavement and concrete breaker, i.e.; superhammer and hoe ram; pile driver; length of boom including length of leads, shall determine premium rate applicable; roadway surface grinder; scoop (loader and shovel); shovels; tree chopper with boom; trench machines.

GROUP 2: "A" frame; backhoe (combination); boom attachment on loaders (rate based on size of bucket) not applicable to pipehook, boring and drilling machines; brush chopper; shredder and tree shredder; tree shearer; cableways; carryalls; concrete pump; concrete pumping system; pumpcrete and similar types; conveyors, 125 ft. and over; drill doctor including dust collector, maintenance); front end loaders (2 yds. but less than 5 yds.); graders (finisher); groove cutting machine (ride on type); header planer; hoists; (all types hoists, shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete brick shaft caisson, snorkel roof, and/or any other similar type hoisting machines, portable or stationary, except Chicago boom type); hoists (Chicago boom type); hydraulic cranes, 10 tons and under, hydro-axle; jacks screw air hydraulic power operated unit or console type (not hand jack or pile load

test type); log skidder; pans; pavers (all concrete; pumpcrete machines; squeezecrete and concrete pumping (regardless of size); scrapers; side booms; straddle carrier; ross and similar types; winch truck (hoisting).

GROUP 3: Asphalt curbing machine; asphalt plant engineer; asphalt spreader; autograder tube finisher and texturing machine (CMI and similar types); autograde curercrete machine (CMI and similar types); autograde curb trimmer and sidewalk; shoulder; slipform (CMI and similar types); bar bending machines (power); batchers; batching plant and crusher on side; belt conveyor systems; boom type skimmer machines, bridge deck finisher; bulldozers (all); car dumpers (railroad); compressor and blower type units (used independently or mounted on dual purposes trucks, on job site or in conjunction with job site in loading and unloading of concrete, cement, fly ash, instancrete, or similar type materials); compressor (2 or 3) (battery); concrete finishing machines; concrete saws and cutters (ride on type); concrete spreaders; hetzel; rexomatic and similar types; concrete vibrators, conveyors; under 125 ft.; crushing machines; ditching machine; small (ditchwitch or similar type); dope pots (mechanical with or without pump); dumpsters elevator; fireman; fork lifts (economobile; lull and similar types of equipment); front end loaders (1 yd. and over but less than 2 yds.). generators (2 OR 3) in battery; giraffe grinders; graders and

motor patrols; gunnite machines (excluding nozzle); hammer vibratory (in conjunction with generator); hoist (roof, tugger, aerial platform hoist and house cars); hoppers; hopper doors (power operated); ladders (motorized); laddervator; locomotive; dinky type; maintenance; utility man; mechanics; mixers (except paving mixers); motor patrols and graders; pavement breakers, small; self-propelled ride on type (also maintaining compressor or hydraulic unit); pavement breaker; truck mounted; pipe bending machine (power); roller; black top; scales; power; seaman pulverizing mixer; shoulder widener; silos; skimmer machines (boom type); steel cutting machine; services and maintaining tractors; tug captain; vibrating plants (used in conjunction with unloading); welder and repair mechanics, concrete cleaning/decontamination machine operator, directional boring machine, heavy equipment robotics operator/technician, master environmental maintenance technician, ultra high pressure waterjet cutting tool system operator/maintenance technician, vacuum blasting machine operator/maintenance technician.

GROUP 4: Brooms and sweepers, chippers, compressor (single), concrete spreaders (small type), conveyor loaders (not including elevator graders), engines, large diesel (1620 H.P.) and staging pump, farm tractors; fertilizing equipment (operation and maintenance) fine grade machine (small type); form line graders (small type); front loader (under 1 yd.); generator (single); grease, gas, fuel and oil supply trucks; heaters (nelson or other type including propane, natural gas or flow-type units); lights; portable generating light plants; mixers; concrete small; mulching equipment (operation and maintenance) pumps (4 inch suction and over including sumbersible pumps); pumps (2 or less

than 4" suction and over including submersible pumps); pumps (diesel engine and hydraulic) immaterial of power road finishing machines (small type); rollers; grade; fill or stone base; seeding equipment (operation and maintenance of); sprinkler and water pump trucks steam jennies and boilers, stone spreader; tamping machines; vibrating ride-on; temporary heating plant (nelson or other type, including propane, natural gas or flow type untis); water and sprinkler trucks; welding machines (gas, diesel, and/or electric converters of Any type, single; two or three in a battery); welding systems, multiple (rectifier transformer type); wellpoint systems.

GROUP 5: Oiler.

GORUP 6: Helicopter Pilot.

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington'd Birthday, Memorial Day; Independence Day; Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day
- B. Employee receives 20% Premium Pay for Hazardous Waste Work.

 ENGI0825C 07/01/2000

| | Rates | Fringes |
|---------------------------|-------|-----------|
| POWER EQUIPMENT OPERATORS | | |
| TANK ERECTION: | | |
| GROUP 1 | 33.61 | 15.65+A+B |
| GROUP 2 | 32.77 | 15.65+A+B |
| GROUP 3 | 34.75 | 15.65+A+B |
| GROUP 4 | 30.68 | 15.65+A+B |
| GROUP 5 | 25.47 | 15.65+A+B |

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday Memorial Day; Independence Day; Labor Day; Veteran's Day, Thanksgiving Day; and Christmas Day.
- B. Employee receives 20% premium pay for hazardous waste work.

TANK ERECTION CLASSIFICATIONS

GROUP 1: Operating Engineers--on all Cranes, derricks, etc. with booms including jib 140 ft. or more above the ground.

GROUP 2: Operating Engineers--on all equipment, including cranes derricks, etc. with booms including jib, less than 140 ft. above the ground.

GROUP 3: Helicopters--Pilot.

GROUP 4: Air compressors, welding machines and generators (gas, diesel, or electrical driven equipment and sources of power from a permanent plant, i.e., steam, compressed air, hydraulic or other power, for the operating of any machine or automatic tools

used in the erection, alteration, repair and dismantling of tanks and any and all "DUAL PURPOSE" trucks used on the construction job site.

GROUP 5: Oiler.

ENGI0825D 07/01/2000

| | Rates | Fringes |
|---|-------|-----------|
| POWER EQUIPMENT OPERATORS: [STEEL ERECTION]: | | |
| GROUP 1 | 33.89 | 15.65+A+B |
| GROUP 2 | 32.98 | 15.65+A+B |
| GROUP 3 | 30.69 | 15.65+A+B |
| GROUP 4 | 28.03 | 15.65+A+B |
| GROUP 5 | 26.50 | 15.65+A+B |
| GROUP 6 | 24.74 | 15.65+A+B |
| GROUP 7 | 35.25 | 15.65+A+B |

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.
- B. Employees receive 20% premium pay for hazardous waste work.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS
[STEEL ERECTION]

GROUP 1: Cranes - (all cranes, land or floating with booms including job 140 ft. and over, above ground); derricks-(all derricks, land or floating with boom including jib 140 ft. and over, above ground).

GROUP 2: Cranes - (all cranes, land or floating with booms including jib less than 140 ft. above ground); derricks (all derricks, land or floating with booms including jib, less than 140 ft. above ground).

GROUP 3: "A" frame; cherry pickers 10 tons and under; hoists; all types hoists shall also include steam, gas, diesel, electric, air hydraulic, single and double drum, concrete, brick shaft caisson, or any other similar type hoisting machines, portable or stationary, except Chicago boom type; jacks-screw air hydraulic power operated unit console type (not hand jack or pile load test type) side booms.

GROUP 4: Aerial platform used hoist; compressor, 2 or 3 in battery; elevators or house cars; conveyors and tugger hoists; fireman; forklift; generators, 2 or 3 maintenance-utility man; rod bending machine (power); welding machines--(gas or electric, 2 or 3 in battery, including diesels); captain power boats; tug master power boats.

GROUP 5: Compressor, single, welding machine, single, gas,

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electric converters of any type, diesel; welding system multiple (rectifier transformer type); generator, single.

GROUP 6: Oiler staddle carrier.

GROUP 7: Helicopter pilot.

ENGI0825E 07/01/2000

| | Rates | Fringes |
|--|-------|---------|
| POWER EQUIPMENT OPERATORS: | | |
| OILOSTATIC MAINLINES & TRANSPORTATION PIPELINES: | | |

| | | |
|---------|-------|-----------|
| GROUP 1 | 31.75 | 15.65+A+B |
| GROUP 2 | 30.10 | 15.65+A+B |
| GROUP 3 | 27.96 | 15.65+A+B |
| GROUP 4 | 26.46 | 15.65+A+B |
| GROUP 5 | 24.74 | 15.65+A+B |
| GROUP 6 | 33.68 | 15.65+A+B |

FOOTNOTES:

- A. PAID HOLIDAYS: New Year's Day; Washington's Birthday,
Memorial Day; Independence Day; Labor Day; Veteran's Day,

Thanksgiving Day; and Christmas Day
B. Employee receives 20% premium pay for hazardous waste work.

OILOSTATIC MAINLINES AND TRANSPORTATION PIPE LINES
CLASSIFICATIONS

GROUP 1: Backhoe; cranes (all types); draglines; front-end loaders (5 yds. and over); gradalls; scooper (loader and shovel); koehring and trench machines.

GROUP 2: "A" frame; backhoe (combination hoe loader); boring and drilling machines; ditching machine, small; ditchwitch or similar type; fork lifts; front end loaders (2 yds and over but less than 5 yds.); graders, finish (fine); hydraulic cranes, 10 tons and under (over 10 tons - crane rate applies); side booms; and winch trucks (hoisting).

GROUP 3: Backfiller; brooms and sweepers; bulldozers; compressors (2 or 3 in battery); front-end loaders (under 2 yds.); generators; giraffe grinders; graders and motor patrols; mechanic; pipe bending machine (power); tractors; water and sprinkler trucks, welder and repair mechanic.

GROUP 4: Compressor (single); dope pots (mechanical with or without pump); dust collectors; farm tractors; pumps (4 in. suction and over); pumps (2 or less than 4 in. suction); pumps; diesel engine and hydraulic (immaterial or power); welding machines; gas or electric converters of any type, single; welding machines, gas or electric converters of any type, 2 or 3 in battery multiple welders; wellpoint systems (including installation and maintenance).

GROUP 5: Oiler, grease, gas, fuel and supply trucks and tire repair and maintenance.

GROUP 6: Helicopter-pilot.

| | | |
|-----------------------------|-------|---------|
| IRON0011B 07/01/2000 | | |
| | Rates | Fringes |
| MONMOUTH AND OCEAN COUNTIES | | |
| IRONWORKERS: | | |
| Structural & Ornamental | 27.28 | 22.15 |
| Reinforcing | 25.78 | 22.15 |

| | | |
|--|-------|---------|
| IRON0068A 07/01/2000 | | |
| | Rates | Fringes |
| BURLINGTON (Remainder), MERCER, MONMOUTH (South half), AND OCEAN (Middle third) COUNTIES | | |
| IRONWORKERS: | | |
| Structual, Ornamental | 27.21 | 19.85 |
| Reinforcing (Concrete Rods) | 25.21 | 19.85 |

| | | |
|---|-------|---------|
| IRON0350A 07/01/2000 | | |
| | Rates | Fringes |
| ATLANTIC, CAPE MAY, CUMBERLAND (Area East of a line drawn from Delaware Bay through the town of Cedarsville and upwards to the point where the county lines of Gloucester, Cumberland, and Atlantic meet), AND OCEAN (Remainder) COUNTIES | | |
| IRONWORKERS: | | |
| BUILDING CONSTRUCTION: | | |
| Structural & Precast | 26.80 | 17.75 |
| Reinforced Concrete | 25.80 | 17.75 |
| Fencing, Graudrail, Erectors, Windows | 24.35 | 17.75 |
| HIGHWAY CONSTRUCTION: | | |
| Reinforced Concrete | 23.50 | 17.75 |
| Structural & Precast | 25.85 | 17.75 |

| | | |
|--|-------|---------|
| IRON0399A 07/01/2000 | | |
| | Rates | Fringes |
| BURLINGTON (Southern portion up to but not including Lumberton and Chatsworth Twps.), CAMDEN, CUMBERLAND (Remainder), GLOUCESTER, AND SALEM COUNTIES | | |
| IRONWORKERS: | | |
| Structural, Ornamental, and Reinforcing | 28.85 | 13.65 |
| Hazardous work | 31.85 | 13.65 |

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* LABO0172A 03/01/2001

Rates Fringes
ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER,
MERCER, OCEAN AND SALEM COUNTIES

LABORERS:

| | | |
|---------|-------|---------|
| GROUP 1 | 23.70 | 10.65+A |
| GROUP 2 | 24.00 | 10.65+A |
| GROUP 3 | 24.20 | 10.65+A |
| GROUP 4 | 24.40 | 10.65+A |
| GROUP 5 | 24.65 | 10.65+A |
| GROUP 6 | 28.20 | 10.65+A |
| GROUP 7 | 26.70 | 10.65+A |

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday,
Memorial Day, Independence Day; Labor Day, Veteran's Day,
Presidential Election Day, Thanksgiving Day, and Christmas
Day, provided the employee works 3 days for the same
Employer within a period of ten working days consisting of
five working days before and five working days after the

day upon which the holiday falls or is observed.

LABORERS CLASSIFICATIONS

GROUP 1: Common laborers, landscape laborers, railroad track
laborers, flagmen, salamander tenders, pitman, dumpman,
waterproofing laborers, rakers and tampers on cold patch work,
and wrapping and coating of all pipes.

GROUP 2: Powder carrier, magazine tender, and signalman.

GROUP 3: Sewer pipe, laser men, conduit and duct line layer,
power tool operator, jack hammer, chipping hammer, pavement
breaker, power buggy, concrete cutter, asphalt cutter, sheet
hammer and tree cutter operators, sandblasting cutting, burning
and such other power tools used to perform work usually done
manually by laborers.

GROUP 4: Wagon drill operator, timberman and drill master.

GROUP 5: Finisher, manhole, catch basin or inlet builder, form
setter, rammer, paver, gunite nozzleman and stonecutter.

GROUP 6: Blaster.

GROUP 7: Hazardous waste laborer.(Excludes asbestos work).

LABO0172B 03/01/2000

| | | |
|----------------------------|-------|---------|
| | Rates | Fringes |
| LABORERS; FREE AIR TUNNEL: | | |
| GROUP 1 | 27.35 | 10.05+A |

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| | | |
|---------|-------|---------|
| GROUP 2 | 23.95 | 10.05+A |
| GROUP 3 | 23.80 | 10.05+A |
| GROUP 4 | 23.30 | 10.05+A |

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day; Independence Day, Labor Day, Presidential Election Day, provided the employee works 3 days for the same Employer within a period of ten working days consisting of five working days before and five working days after the day upon which the holiday falls or is observed.

LABORERS; FREE AIR TUNNEL CLASSIFICATIONS

GROUP 1: Blasterers.

GROUP 2: Skilled men (including miners, drill runners, iron men, maintenance men, conveyor men, safety miners, riggers, block layers, cement finishers, rod men, caulkers, powder carriers, all other skilled men).

GROUP 3: Semi-skilled men (including chuck tenders, track men, nippers, brakemen, derail men, cable men, hose men, grout men, gravel men, form men, bell or signal men (top or bottom), form workers and movers, concrete workers, shaft men, tunnel laborers, all other semi-skilled).

GROUP 4: All others (including powder watchmen, change house attendants, top laborers).

LABO0172C 03/01/2000

| | Rates | Fringes |
|--|-------|---------|
| ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, MERCER, MONMOUTH, OCEAN, SALEM, AND MIDDLESEX (Southern half) COUNTIES | | |

LABORERS - ASPHALT CONSTRUCTION:

| | | |
|---|-------|---------|
| STREET: | | |
| Head Rakers | 22.05 | 11.70+A |
| Rakers & Screed Men | 21.90 | 11.70+A |
| Tampers, Smothers, Kettlemen, Painters, Shovelers and Roller Boys | 21.65 | 11.70+A |
| PLANT: | | |
| Scale Mixers & Burner Men | 21.90 | 11.70+A |
| Feeders and Dust Men | 21.65 | 11.70+A |

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day; Independence Day; Labor Day; Veteran's Day, Presidential Election Day, Thanksgiving Day, and Christmas Day provided The Employee works 3 days for same employer within a period of ten working days consisting

of five working days before and five working days after
the day upon which the holiday falls or is observed.

LABO0222A 01/01/2001

| | Rates | Fringes |
|---|-------|---------|
| BURLINGTON (Twps. of Cinnaminson, Delance, Delran, East Hampton, Edgewater Park, Evesham, Hainesport, Lumberton, Medford, Moorestown, Mount Laurel, Pemberton, Shamong, South Hampton, Tabernacle, West Hampton, Willingsboro and Woodland); CAMDEN; CUMBERLAND; GLOUCESTER; AND SALEM COUNTIES | | |

LABORERS (BUILDING CONSTRUCTION):

| | | |
|---------|-------|-------|
| CLASS A | 21.70 | 11.00 |
| CLASS B | 21.20 | 11.00 |
| CLASS C | 18.02 | 11.00 |

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer, Tamper, Motorized Tampers and Compactors, Street Cleaning Machines, Scaffold Builder, Hydro, Demolition Equipment, All types of Motorized Fork Lifts Riding Motor Buggy Operator, Bobcat Operator, Mortar Man, Burners, Nozzle Man on Gunite work.

CLASS B: All laborers not listed in Class A or C.

CLASS C: Laborers doing Janitorial-type light clean up work associated with the turnover of the project to the owner All Flagman, and those manning temporary heat of all types.

LABO0415A 01/01/2001

| | Rates | Fringes |
|--|-------|---------|
| ATLANTIC; BURLINGTON (Twps. of Bass River and Washington); CAPE MAY; CUMBERLAND (Twps. of Commercial, Dawne, Fairfiled, Lawrence, Maurice, and Millville); AND OCEAN (That portion up to and including Lacy Twp.) COUNTIES | | |

LABORERS (BUILDING CONSTRUCTION):

| | | |
|---------|-------|-------|
| CLASS A | 21.70 | 11.00 |
| CLASS B | 21.20 | 11.00 |
| CLASS C | 18.02 | 11.00 |

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer, Tamper, Motorized Tampers and Compactors, Street Cleaning Machines, Scaffold Builder, Hydro Demolition Equipment, all types of Motorized Fork Lifts, Riding Motor Buggy Operator, Bobcat Operator, Mortar Man, Burners, Nozzle Man on Gunite work.

CLASS B: All laborers not listed in Class A or C.

CLASS C: Laborers doing Janitorial- type light clean up work

associated with the turnover of the project to the owner
All flagman, and those manning temporary heat of all
types.

* LAB00472A 03/01/2001

| | Rates | Fringes |
|--|-------|---------|
| MONMOUTH COUNTY | | |
| LABORERS (HEAVY AND HIGHWAY CONSTRUCTION): | | |
| GROUP 1 | 23.70 | 10.65+A |
| GROUP 2 | 24.10 | 10.65+A |
| GROUP 3 | 24.20 | 10.65+A |
| GROUP 4 | 24.40 | 10.65+A |
| GROUP 5 | 24.65 | 10.65+A |
| GROUP 6 | 28.20 | 10.65+A |
| GROUP 7a | 26.70 | 10.65+A |
| Group 7b | 24.70 | 10.65+A |

LABORERS CLASSIFICATIONS (HEAVY & HIGHWAY)

GROUP 1: Common laborers, landscape laborers, railroad track laborers, flagmen, salamander tenders, pitman, dumpman, waterproofing laborers, rakers and tampers on cold patch work, and wrapping and coating of all pipes, & Asphalt Laborers.

GROUP 2: Powder carrier, magazine tender, signalman, asphalt raker, and asphalt screedman

GROUP 3: Sewer pipe, laser men, conduit and duct line layer, power tool operator, jack hammer, chipping hammer, pavement breaker, power buggy, concrete cutter, asphalt cutter, sheet hammer and tree cutter operators, sandblasting cutting, burning, power tool operator, and such other power tools used to perform work usually done manually by laborers.

GROUP 4: Wagon drill operator, timberman and drill master.

GROUP 5: Finisher, manhole, catch basin or inlet builder, form setter, rammer, paver, gunite nozzleman, and stone cutter

GROUP 6: Blaster.

Group 7a: Hazardous waste laborer required to wear level A,B, or C personal protection.

GROUP 7b: Certified laborer working a hazardous waste removal project or site at a task requiring hazardous waste related certification, but who is not working in a zone requiring level A,B, or C personal protection.

FOOTNOTE:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day,

Veteran's Day, Presidential Election Day, Thanksgiving Day, and Christmas Day provided the employee works 3 days for the same employer within a period of 10 working days consisting of 5 working days before and 5 working days after the day upon which the holiday falls or is observed

* LABO0595A 01/01/2001

| | Rates | Fringes |
|---|-------|---------|
| BURLINGTON (Remainder), MERCER, MONMOUTH, and OCEAN (Remainder) COUNTIES: | | |

LABORERS (BUILDING CONSTRUCTION):

| | | |
|---------|-------|-------|
| CLASS A | 21.70 | 11.00 |
| CLASS B | 21.20 | 11.00 |
| CLASS C | 18.02 | 11.00 |

LABORERS CLASSIFICATIONS (BUILDING CONSTRUCTION)

CLASS A: Jack Hammer; Tamper; Motorized Tampers and Compactors Street Cleaning Machines; Scaffold Builder; Hydro Demolition Equipment; All types of Motorized Fork Lifts; Riding Motor Buggy Operator; Bob Cat Operator; Mortar Man; Burners; Nozzle Man on gunite Work.

CLASS B: All Laborers not listed in Class A or C.

Class C Laborers doing Janitorial type light clean up associated with the turnover of the project or part of a project to the owner; All Flagman; and those manning temporary heat of all types.

:

* LABO1030A 04/01/2001

| | Rates | Fringes |
|---|-------|---------|
| LABORERS: (The removal, abatement, enclosure and decontamination of personal protective equipment, chemical protective clothing and machinery relating to asbestos and/or toxic and hazardous waste of materials which shall include but not necessarily be limited to: the erection, moving, servicing and dismantling to all enclosures, scaffolding, barricades, and the operation of all tools and equipment normally used in the removal or abatement of asbestos and toxic and hazardous waste or materials, the labeling, bagging, cartoning, crating, or other packaging of materials for disposal; and the clean up of the work site and all other work incidental to the removal, abatement, encapsulation, enclosure, and decontamination of asbestos or toxic and hazardous waste materials; and in addition, all work tasks involved in the maintenance and operation of energy resource recover plants (co-generation plants).) | | |

| | | |
|----------|-------|-------|
| LABORERS | 21.85 | 10.12 |
|----------|-------|-------|

PAIN0252H 06/01/2000

Rates Fringes
ATLANTIC, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER, SALEM, and
parts of BURLINGTON and OCEAN (everything south of these cities
in Burlington and Ocean Counties-Florence to Bustleton to
Columbus to Jobstown to Pemberton to Onga's Hat to Chatsworth to
Whiting to Pinewald to Ocean Gate to Seaside Heights) COUNTIES:

| | Rates | Fringes |
|----------|-------|---------|
| GLAZIERS | 25.50 | 11.45 |

PAIN0711A 05/01/2000

Rates Fringes
ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER,
MONMOUTH, OCEAN, & SALEM COUNTIES:

| | Rates | Fringes |
|--------------------------------------|-------|----------|
| PAINTING, PAPERHANGING & ALLIED WORK | 28.75 | 2.54+27% |

SPRAYING, SANDBLASTING, DIPPING,
POWER TOOLS (Over 115 volts) &
PAPERHANGING PASTING APPARATUS
WORK ON TANKS, BRIDGES, TOWERS,
STACKS, & OPEN STRUCTURAL STEEL,
WORK FROM CABLES & SWINGING SCAFFOLDS,
EXTERIOR WORK ABOVE THREE STORIES

| | |
|-------|----------|
| 31.25 | 2.54+27% |
|-------|----------|

REPAINT WORK & PREPARATION THEREFORE
(including jobs where no major alterations
are taking place but excluding bridges,
stacks, elevated tanks & generating
stations)

| | |
|-------|----------|
| 22.00 | 2.54+27% |
|-------|----------|

PAIN0711H 05/01/2000

Rates Fringes
MERCER COUNTY

PAINTERS:

New Construction and
Major Alterations

| | |
|-------|----------|
| 28.75 | 27%+2.55 |
|-------|----------|

Repaint Work

| | |
|-------|----------|
| 22.00 | 27%+2.55 |
|-------|----------|

Spraying or application of
Hazardous or Dangerous
Materials on Repaint Work

| | |
|-------|----------|
| 24.00 | 27%+2.55 |
|-------|----------|

Bridges, TV & Radio Towers,
0 Structural Steel & Tanks above 3
1 stories in height (30' or over),
2 Smoke Stacks, Water Towers, Sand-
3 Blasting, Steam Cleaning, Spraying,
4 or application of Hazardous
5 Materials

| | |
|-------|----------|
| 31.25 | 27%+2.55 |
|-------|----------|

DACA61-01-B-0001

00820-18

6
7 Paperhanging 25.60 27%+2.55
8 -----
9
0 PAIN0711J 08/01/1999
1 Rates Fringes
2 DRYWALL FINISHERS & TAPERS 28.25 11.23
3 -----
4
5 PAIN0711K 05/01/2000
6 Rates Fringes
7 MERCER, MONMOUTH and parts of BURLINGTON AND OCEAN (everything
8 north of these cities in BURLINGTON and OCEAN COUNTIES Florence
9 to Bustleton to Columbus to Jobstown to Pemberton to Onge
0 Hat to Chatsworth to Whiting to Pinewald to Ocean Gate to
1
2 Seaside Heights) COUNTIES:
3
4 GLAZIERS: 28.75 10.30
5 -----
6
7 PLAS0008I 05/01/2000
8 Rates Fringes
9 CAMDEN, GLOUCESTER and SALEM COUNTIES:
0
1 PLASTERERS 24.35 12.65
2 -----
3
4 PLAS0008L 05/01/2000
5 Rates Fringes
6 ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER, MONMOUTH &
7 OCEAN COUNTIES:
8
9 PLASTERERS 27.15 12.55
0 -----
1
2 * PLAS0699A 05/01/2001
3 Rates Fringes
4 CAMDEN, GLOUCESTER, AND SALEM COUNTIES
5
6 CEMENT MASONS 26.65 11.70
7 -----
8
9 PLUM0009I 03/01/2001
0 Rates Fringes
1 AIR CONDITIONING & REFRIGERATION
2 MECHANICS 23.81 9.09
3
4 SCOPE OF WORK:
5 Installation of air conditioning and refrigeration equipment
6 whose combined tonnage does not exceed 15 tons. Installation of
7 water cooled air conditioning that does not exceed 10 tons
8 (includes piping of compenent system and erection of water
9 tower). Installation of air cooled air conditioning that does
0 not exceed 15 tons. Installation of air conditioning equipment
1 of the "Package-Unitary" rooftop type, the combined tonnage of
DACA61-01-B-0001 00820-19

2 which does not exceed 35 tons. Packaged Unitary Air Conditioning
 3 and Refreigeration Institute (ARI) as follows: "A unitary air
 4 conditioner consists of one or more cooling coil, and air moving
 5 device, a cpmpressor and condenser combination, and may include a
 6 heating function as well". Any and all related piping to the
 7 above installation will be done under the appropriate trade
 8 jurisdiction.

9 -----

0

1 PLUM0009J 07/01/2000

2 Rates Fringes
 3 BURLINGTON (from the town of Burlington City, to everything north
 4 along County Road Route 541 East also known as High Street, until
 5 it reaches the city of Mount Holly which is also Local 9
 6 territory, Madison Avenue in Mount Holly to State Road Route 38
 7
 8 East, again everything north along State Road Route 38 East
 9 until its cross over, State Road Route 206 and becomes County
 0 Road Route 530, continuing on including Pemberton Boro to south
 1 on Magnolia Road in Pemberton Township to Magnolia New Lisbon
 2 Road (Route 545), to south on Mount Holly Misery Road to State
 3 Road Route 70 East to the Ocean County Line), MERCER, MONMOUTH,
 4 AND OCEAN COUNTIES:

5
 6 PLUMBERS & PIPEFITTERS 31.98 14.30
 7 -----

8

9 PLUM0322A 05/01/2000

0 Rates Fringes
 1 ATLANTIC; BURLINGTON (Ramainder) CAMDEN; CAPE MAY; CUMBERLAND;
 2 GLOUCESTER; AND SALEM COUNTIES

3
 4 PLUMBERS/PIPEFITTERS 27.11 15.70
 5 -----

6

7 ROOF0004A 06/01/1996

8 Rates Fringes
 9 MONMOUTH COUNTY (Remainder), AND OCEAN (Remainder) COUNTIES

0
 1 ROOFERS 24.22 11.75
 2 -----

3

4 * ROOF0030D 05/01/2001

5 Rates Fringes
 6 ATLANTIC, BURLINGTON, CAMDEN, CAPE MAY, CUMBERLAND, GLOUCESTER,
 7 MERCER AND SALEM COUNTIES; and the following portions of MONMOUTH
 8 AND OCEAN COUNTIES: West of a line starting from the point on
 9 Route 70 where Burlington and Ocean Counties meet, Easterly along
 0 Route 70 to Route 571, along Route 571 to Cassville, Easterly on
 1 Route 528 to Van Hiseville, Northerly on Route 527 to Manalapan,
 2 Westerly on Route 33 to the Monmouth County Line

3

4 ROOFERS:

5 Shingle, slate and tile 19.25 6.17
 6 All other work 25.50 12.55+A

7

8 FOOTNOTE:

9 A. PAID HOLIDAY: Election Day.

0 -----

1

2 SFNJ0669B 04/01/2001

| | Rates | Fringes |
|---|-------|---------|
| 4 ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER (Remainder), | | |
| 5 MONMOUTH, OCEAN, AND SALEM (Remainder) COUNTIES | | |

6

| | | |
|---------------------|-------|------|
| 7 SPRINKLER FITTERS | 31.30 | 6.00 |
|---------------------|-------|------|

8 -----

9

0 * SFNJ0692C 05/01/2001

| | Rates | Fringes |
|--|-------|---------|
| 2 CAMDEN, GLOUCESTER, MERCER (Town of Trenton), AND SALEM (Penns | | |
| 3 Grove, excluding Penns Grove Airport) COUNTIES | | |

5

| | | |
|---------------------|-------|-------|
| 6 SPRINKLER FITTERS | 33.57 | 11.00 |
|---------------------|-------|-------|

7 -----

8

9 SHEE0019M 05/01/2000

| | Rates | Fringes |
|---|-------|---------|
| 1 CAMDEN, GLOUCESTER, & SALEM COUNTIES: | | |

2

| | | |
|----------------------|-------|---------|
| 3 SHEET METAL WORKER | 27.43 | 16.15+H |
|----------------------|-------|---------|

4

5 H-Election Day is a paid holiday.

6 -----

7

8 SHEE0027B 06/01/2000

| | Rates | Fringes |
|--|-------|---------|
| 0 ATLANTIC, BURLINGTON, CAPE MAY, CUMBERLAND, MERCER, MONMOUTH AND | | |
| 1 OCEAN COUNTIES | | |

2

| | | |
|-----------------------|-------|-------|
| 3 SHEET METAL WORKERS | 31.00 | 15.38 |
|-----------------------|-------|-------|

4 -----

5

6 SUNJ1002A 12/07/1993

| | Rates | Fringes |
|-----------------|-------|---------|
| 8 MERCER COUNTY | | |

9

| | | |
|---------------------------|-------|------|
| 0 CEMENT MASONS (BUILDING | | |
| 1 CONSTRUCTION ONLY) | 19.60 | 8.83 |

2 -----

3

4 TEAM0331A 01/01/1998

| | Rates | Fringes |
|----------------------------------|-------|---------|
| 6 ATLANTIC AND CAPE MAY COUNTIES | | |

7

8 TRUCK DRIVERS:

| | | |
|-----------|-------|--------|
| 9 GROUP 1 | 20.75 | 8.92+A |
|-----------|-------|--------|

| | | |
|-----------|-------|--------|
| 0 GROUP 2 | 20.90 | 8.92+A |
|-----------|-------|--------|

| | | |
|-----------|-------|--------|
| 1 GROUP 3 | 21.10 | 8.92+A |
|-----------|-------|--------|

| | | |
|-----------|-------|--------|
| 2 GROUP 4 | 21.25 | 8.92+A |
|-----------|-------|--------|

3

4 FOOTNOTE:

5 A. PAID HOLIDAYS: New Year's Day; Washington's Birthday;
6 Memorial Day; Independence Day; Labor Day; Veteran's Day;
7 Presidential Election Day; Thanksgiving Day; & Christmas
8 Day; provided the employee works 3 days in the week in
9 which the holiday falls.

0

1 TRUCK DRIVERS CLASSIFICATIONS

2

3 GROUP 1: Striaight Truck Driver, Dump Truck Driver, Water Truck
4 Driver, Transit Mix Driver, Pickup Truck Driver, Tank Truck Driver
5 Track Truck Driver, Agitator Truck Driver, Concrete Mobile Unit
6 Driver, Tringer Bead Truck Driver, Ross Carrier Driver, Warehouse
7 Forklift Driver, A Frame Truck Driver, Gin Pole Truck Driver,
8
9 Form Truck Driver, Driver for Truck having Self Loading/Unloading
0 Attachment, & Vacuum Truck/Trailer.

1 GROUP 2: Trucks Towing Driver

2 GROUP 3: Trailer Truck Driver, Winch Truck Driver, Off Road Dump
3 Truck Driver, Fuel Truck Driver, Tractor Trailer (any trailer
4 driver), Asphalt Oil Distributor Driver, & Off Road Water Truck
5 Driver.

6 GROUP 4: Mechanics.

7

8 GROUP 2: Drivers on Euclids, 10 Wheel Tractors and Tractor
9 Trailer Trucks, Low Bed, and Pole Trailers

0

1

2 TEAM0469D 05/01/2000

3

4 BURLINGTON (Remainder), MERCER, MONMOUTH, AND OCEAN COUNTIES

5

6 TRUCK DRIVERS:

| | | |
|-----------|-------|----------|
| 7 GROUP 1 | 26.35 | 11.835+A |
| 8 GROUP 2 | 26.40 | 11.835+A |
| 9 GROUP 3 | 26.50 | 11.835+A |
| 0 GROUP 4 | 26.60 | 11.835+A |

1

2 FOOTNOTE:

3 A. Employees working or receiving pay for 80 days within a
4 year receive one week's paid vacation (48 hours); 125
5 days receive two weeks' vacation (96 hours); 145 days
6 receive 15 days (120 hours); 15 years seniority and 145
7 days receive 4 weeks vacation (160 hours).

8 PAID HOLIDAYS: New Year's Day; Washington's Birthday;
9 Memorial Day; Independence Day; Labor Day; Columbus Day;
0 Veteran's Day, General Election Day; Thanksgiving Day;
1 and Christmas Day provided the employee has been assigned
2 to work or "shapes" one day of the calendar week during
3 which the holiday falls. Employee receives \$3.00 per
4 hour premium pay for hazardous waste work.

5

6 TRUCK DRIVERS CLASSIFICATIONS

7

8 GROUP 1: Drivers on the following type vehicles: straight dumps,
9 flats, floats, pick-ups, container haulers, fuel, water

0 sprinkler, road oil, stringer, bead, hot pass, bus dumpcrete,
 1 transit mixers, agitator mixer, half truck, winch truck, side-0-
 2 matic, dynamite, power, x-ray, welding, skid, jeep, station
 3 wagon, stringer, A-frame, all dual purpose trucks, truck with
 4 mechanical tailgate, asphalt distributor, batch trucks, seeding,
 5 mulching, fertilizer, air compressor trucks (in transit), parts
 6 chaser, escort, scissor, Hi-lift, telescope, concrete breaker,
 7 gin pole, stone, sand, asphalt distributor and spreader, nipper,
 8 fuel trucks (drivers on fuel trucks, including handling of unit),
 9 skid truck (debris container - entire unit), concrete mobile
 0 trucks (entire unit), expediter (parts chaser), beltcrete trucks,
 1 pumpcrete trucks, line truck, reel truck, wreckers, utility
 2 trucks, tank trucks, warehousemen, warehouse partsmen, yardmen,
 3
 4 lift truck in warehouse, warehouse clerk, parts man, material
 5 checkers, receivers shippers, binning men (materials cardex man);
 6 drivers on the following type vehicle: broyhill coal tar epoxy
 7 trucks, little-ford bituminous distributor, slurry seal truck or
 8 vehicle, thiokol trackmaster pick-up (swamp cat pickup, bucket
 9 loader dump truck and any rubber-tired tractor used in pulling
 0 and towing farm wagons and trailers of any description, similar
 1 type vehicles); off-site and on-site repair shop, team drivers,
 2 vacuum or vac-all trucks (entire unit)
 3

4 GROUP 2: Drivers on straight 3-axle materials; truck and floats
 5

6 GROUP 3: Drivers on all euclid-type vehicles; euclids,
 7 international harvesters, wabcos, caterpillar, koehring,
 8 tractors, and wagons, dumpers, straight, bottom, rear and side
 9 dumps, carryalls and scrapers (not self-loading - loading over
 0 the top), water sprinkler, trailers, water pulls and similar
 1 types of vehicles; drivers on tractors and trailer type vehicles;
 2 flat, floats, I-beam, low beds, water sprinkler, bituminous
 3 transit mix, road oil, fuel bottom dump hopper, rear dump, office
 4 shanty, epoxy, asphalt, agitator mixer, mulching, stringer,
 5 seeding, fertilizing pole spread, bituminous distributor, water
 6 pulls (entire unit) (tractor trailer), reel trailer and similar
 7 types of vehicles
 8

9 GROUP 4: Winch Trailer Drivers
 0 -----
 1

2 TEAM0676A 05/01/1996

| | Rates | Fringes |
|--|-------|------------|
| 4 BURLINGTON (Area West of the NJ Turnpike to the Delaware River), | | |
| 5 CAMDEN, CUMBERLAND, GLOUCESTER AND SALEM COUNTIES | | |
| 6 | | |
| 7 TRUCK DRIVERS: | | |
| 8 GROUP 1 | 20.20 | 8.1875+A+B |
| 9 GROUP 2 | 20.25 | 8.1875+A+B |
| 0 GROUP 3 | 20.40 | 8.1875+A+B |
| 1 GROUP 4 | 20.60 | 8.1875+A+B |
| 2 GROUP 5 | 20.75 | 8.1875+A+B |
| 3 GROUP 6 | * | 8.1875+A+B |
| 4 | | |

5 FOOTNOTES:

6 A. Employee who has worked or received pay for 90 days
7 within a year prior to his anniversary date shall
8 receive 56 hours straight time vacation pay; for 3 years
9 but less than 8 years of service he will receive 100
0 hours of straight time vacation pay; 15 years or more he
1 will receive 165 hours of straight time vacation pay.
2 B. PAID HOLIDAYS: New Year's Day, Memorial Day,
3 Independence Day, Labor Day, Veteran's Day,
4 Presidential Election Day, Thanksgiving Day, Christmas
5 Day, and two personal holidays, Good Friday, and
6 Christmas Eve afternoon (provided employee works that
7 morning) on the condition that the employee works or is
8 available for work on at least two days in the week in
9
0 which the holiday occurs.

1
2 TRUCK DRIVERS CLASSIFICATIONS
3

4 GROUP 1: Warehouseman
5

6 GROUP 2: Dump truck, water truck, transit mix, pickup, tank,
7 track, agitator, concrete mobile unit, dytinger bead, tack
8 rig, ross carrier, warehouse forklift, A-frame, gin pole
9 form truck, truck having self-loading/unloading attachment,
0 straight
1

2 GROUP 3: Truckstowing
3

4 GROUP 4: Trailer winch off road dump, fuel, tractor trailer,
5 asphalt oil distributor, off road water truck
6

7 GROUP 5: Mechanics
8

9 *GROUP 6: Truck drivers, on hazardous waste removal work on a
0 state or federally designated hazardous waste site where
1 the truck driver is in direct contact with hazardous
2 materials and when personal protective equipment is
3 required for respiratory, skin and eye protection
4 the teamster shall receive \$2.25 per hour in addition to
5 the regular rate of pay including overtime pay.
6 -----
7

8 WELDERS - Receive rate prescribed for craft performing operation
9 to which welding is incidental.
0 =====

1
2 Unlisted classifications needed for work not included within
3 the scope of the classifications listed may be added after
4 award only as provided in the labor standards contract clauses
5 (29 CFR 5.5(a)(1)(v)).
6 -----

7 In the listing above, the "SU" designation means that rates
8 listed under that identifier do not reflect collectively
9 bargained wage and fringe benefit rates. Other designations
0 indicate unions whose rates have been determined to be
1 prevailing.

2
3 WAGE DETERMINATION APPEALS PROCESS
4
5 1.) Has there been an initial decision in the matter? This can
6 be:
7
8 * an existing published wage determination
9 * a survey underlying a wage determination
0 * a Wage and Hour Division letter setting forth a
1
2 position on a wage determination matter
3 * a conformance (additional classification and rate)
4 ruling
5
6 On survey related matters, initial contact, including requests
7 for summaries of surveys, should be with the Wage and Hour
8 Regional Office for the area in which the survey was conducted
9 because those Regional Offices have responsibility for the
0 Davis-Bacon survey program. If the response from this initial
1 contact is not satisfactory, then the process described in 2.)
2 and 3.) should be followed.
3
4 With regard to any other matter not yet ripe for the formal
5 process described here, initial contact should be with the Branch
6 of Construction Wage Determinations. Write to:
7
8 Branch of Construction Wage Determinations
9 Wage and Hour Division
0 U. S. Department of Labor
1 200 Constitution Avenue, N. W.
2 Washington, D. C. 20210
3
4 2.) If the answer to the question in 1.) is yes, then an
5 interested party (those affected by the action) can request
6 review and reconsideration from the Wage and Hour Administrator
7 (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:
8
9 Wage and Hour Administrator
0 U.S. Department of Labor
1 200 Constitution Avenue, N. W.
2 Washington, D. C. 20210
3
4 The request should be accompanied by a full statement of the
5 interested party's position and by any information (wage payment
6 data, project description, area practice material, etc.) that the
7 requestor considers relevant to the issue.
8
9 3.) If the decision of the Administrator is not favorable, an
0 interested party may appeal directly to the Administrative Review
1 Board (formerly the Wage Appeals Board). Write to:
2
3 Administrative Review Board
4 U. S. Department of Labor
5 200 Constitution Avenue, N. W.
6 Washington, D. C. 20210
7

8 4.) All decisions by the Administrative Review Board are final.
9 END OF GENERAL DECISION

SPECIFICATIONS

CONSTRUCTION AND REPAIR OF TAXIWAYS
AIR NATIONAL GUARD AREA

MCGUIRE AIR FORCE BASE
WRIGHTSTOWN, NEW JERSEY

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| | |
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| | |
|-------|------------------|
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|-------|------------------|

(ONLY DIVISIONS 1, 2, 3, AND 16 USED IN THESE SPECIFICATIONS)

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SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

The contract includes, but is not limited to, the following work at McGuire Air Force Base, Wrightstown, New Jersey.

1.1 BASE BID WORK ITEMS:

1.1.1 Taxiway Y Construction

The Contractor shall construct a new Taxiway Y using base course stone and bituminous concrete pavement as shown on the contract drawings. Also included are new shoulders and new pavement edge drains. All areas adjacent to the new bituminous concrete pavement shall be regraded and turfed as specified and shown on the drawings. Any other existing grassed areas damaged as a result of the contract work shall be restored to their original condition. Pavement markings will be installed on all new asphalt pavement surfaces as shown on the drawings.

1.1.2 Taxiways H and L Pavement Replacement

1.1.2.1 Taxiway H Bituminous Pavement Replacement

The Contractor shall remove existing bituminous concrete pavement, to the existing underlying bituminous concrete pavement, and replace it with new bituminous concrete pavement within the limits and to the lines and grades shown on the contract drawings (including shoulders). Also included are new edge, exit, and holding lighting including, but not limited to, new light fixtures (complete with lamps), light bases, isolation transformers, wire, conduit, boxes, fittings and miscellaneous hardware and a new constant current regulator (CCR). All areas adjacent to the new bituminous concrete pavement shall be regraded and turfed as specified and shown on the drawings. Any other existing grassed areas damaged as a result of the contract work shall be restored to their original condition. Pavement markings will be installed on all new asphalt pavement surfaces as shown on the drawings.

1.1.2.2 Taxiway L Bituminous Pavement Replacement

The contractor shall remove and replace the existing bituminous concrete pavement within the limits and to the lines and grades shown on the drawings. Where the full depth of the base course stone is to be removed, the base course stone shall be replaced with new, control-compacted, dense graded aggregate (D.G.A.). Where only partial excavation of the existing base stone is required (i.e., shoulders), the removed base stone shall be replaced with new heavy-duty bituminous airfield hot-mix. In small areas of Taxiway L, the Contractor shall remove existing bituminous concrete pavement to the existing underlying concrete surface. The Contractor shall remove and replace large areas of unsound concrete in the exposed

underlying concrete surface, when directed by the Contracting Officer. The final surface of the new bituminous pavement shall be sawcut above the existing underlying concrete surface's joint locations and new joint sealant shall be installed in the new bituminous pavement joint. Also included are new edge, exit and holding lighting including, but not limited to, new light fixtures (complete with lamps), light bases, isolation transformers, wire, conduit, boxes, fittings and miscellaneous hardware and a new constant current regulator (CCR). All areas adjacent to the new bituminous concrete pavement shall be regraded and turfed as specified and shown on the drawings. Any other existing grassed areas damaged as a result of the contract work shall be restored to their original condition. Pavement markings will be installed on all new asphalt pavement surfaces as shown on the drawings.

1.2 OPTION WORK ITEM:

1.2.1 Taxiway Y: Edge and Exit Lights

The Contractor shall provide and install new edge and exit lighting for Taxiway Y for the option work. Included, but not limited to, are new light fixtures (complete with lamps), light bases, isolation transformers, wire, conduit, boxes, fittings and miscellaneous hardware and a new constant current regulator (CCR).

1.3 REQUIRED ORDER OF WORK

The Contractor shall complete new Taxiway Y and the pavement replacement work on Taxiway H prior to commencing any contract work on Taxiway L.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.1 DESCRIPTION OF BASE BID ITEMS

1.1.1 Bid Item No. 0001: Taxiway Y Construction

Bid Item No. 0001 includes all labor, materials and equipment required for the construction of new Taxiway Y, including, but not limited to, new shoulders, cold- and hot-poured sealant joints, and new pavement edge drains. The work included under this bid item will not be measured for payment and all costs associated therewith shall be included in the contract lump sum price for Bid Item No. 0001, "Taxiway Y Construction."

1.1.2 Bid Item No. 0002: Taxiway H Pavement Replacement

Bid Item No. 0002 includes Taxiway H pavement replacement, as specified herein. The work included under this bid item will not be measured for payment and all costs associated therewith shall be included in the contract lump sum price for Bid Item No. 0002, "Taxiway H Pavement Replacement". Included shall be new shoulders, hot-poured sealant joints, and new edge, exit, and holding lighting systems.

1.1.3 Bid Item No. 0003: Taxiway L Pavement Replacement

Bid Item No. 0003 includes Taxiway L pavement replacement, as specified herein. The work included under this bid item will not be measured for payment and all costs associated therewith shall be included in the contract lump sum price for Bid Item No. 0003, "Taxiways L Pavement Replacement". Included shall be new shoulders, hot-poured sealant joints, and new edge, exit, and holding lighting systems. Also included is the work to remove and replace large areas of unsound concrete in the exposed underlying concrete surface, when directed by the Contracting Officer. For bid purposes, the Contractor shall assume 70 square yards of concrete requires repair.

1.1.4 Bid Item No. 0004: Taxiway L Joint Installation

Bid Item No. 0004 includes installation of hot-poured sealant joints in the two small areas of Taxiway L where the underlying concrete surfaces are to be exposed. Included in this bid item is the labor, equipment, and supplies required to: survey the existing joints in the exposed, underlying concrete surface; layout those joints in those locations in the new asphalt pavement above; and, cut/install new hot-poured sealant joints in those locations in the new asphalt pavement above. The work included under this bid item will be measured for payment by the linear foot of joint installation. Payment for this work will be made at the contract unit price under Bid Item No. 0004, "Taxiway L Joint Installation".

1.1.5 Bid Item No. 0005: Removal and Replacement of Unstable Material

Bid Item No. 0005 includes the removal and replacement of unstable subgrade material found during the contract work. The work included under this bid item will be measured for payment by the cubic yard of unstable subgrade material removed, disposed of, and properly replaced. Quantity of unstable material removed will be measured from certified weigh tickets. A moist density of 120 pounds per cubic yard shall be used to convert the weight of unstable material to the number of cubic yards. Payment for this work will be made at the contract unit price under Bid Item No. 0005, "Removal and Replacement of Unstable Subgrade Material".

1.2 DESCRIPTION OF OPTION BID ITEM

Bid Item No. 0006 includes providing and installing new edge and exit lighting system on Taxiway Y. The work included under this bid item will not be measured for payment and all costs associated therewith shall be included in the contract lump sum price for Bid Item No. 0006, "Taxiway Y Edge and Exit Lights."

1.3 ITEMS INCLUDED IN THE PRICE OF ALL BID ITEMS

No separate measurement or payment will be made for items of work incidental to all bid items. All of the costs in connection with these, and other overhead items, shall be included in the costs of all bid items:

- Warranty Management
- Project Schedule
- Submittals
- Stormwater Pollution Prevention
- Environmental Protection
- Safety Program
- Quality Control
- Temporary Construction Facilities
- Government Resident Management System
- Record Drawings
- Project Signs

1.4 ITEMS INCIDENTAL TO SEVERAL BID ITEMS

No separate measurement or payment will be made for items of work incidental to several bid items. All of the costs in connection with these items shall be included in the unit price or lump sum price of the items of work to which they are incidental:

- Excavation, Trenching, Backfilling, and Compaction
- Grading, Topsoil, Seed, and Mulch

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

-- End of Section --

SECTION 01090

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the sponsoring organization, e.g.

ASTM B 564 Nickel Alloy Forgings. However, when the sponsoring organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the organizations whose publications are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the sponsoring organization should be ordered from the source by title rather than by number.

ACI INTERNATIONAL (ACI)

P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: <http://www.aci-int.org>
AOK 6/00

AGRICULTURAL MARKETING SERVICE (AMS)

Seed Regulatory and Testing Branch
USDA, AMS, LS Div.
Room 209, Bldg. 306, BARC-East
Beltsville, MD 20705-2325
Ph: 301-504-9430
Fax: 301-504-8098
Internet: <http://www.ams.usda.gov/lsg>
e-mail: james_p_triplett@usda.gov
AOK 6/00

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: www.aashto.org
AOK 6/00

NOTE: AASHTO documents with numbers beginning with M or T are available only in Standard Specifications for Transportation Materials and Methods of Sampling and Testing, 1998 @\$289.00\X

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

11 West 42nd St
New York, NY 10036
Ph: 212-642-4900
Fax: 212-398-0023
Internet: www.ansi.org/
Note: Documents beginning with the letter "S" can be ordered from:
Acoustical Society of America
P. O. Box 1020
Sweickley, PA 15143-9998
Ph: 412-741-1979
Fax: 412-741-0609
Internet: asa.aip.org
AOK 6/00

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
Fax: 610-832-9555
Internet: www.astm.org
AOK 6/00

NOTE: The annual ASTM Book of Standards (66 Vol) is available for \$3500.00. Prices of individual standards vary.

ASPHALT INSTITUTE (AI)

Research Park Dr.
P.O. Box 14052
Lexington, KY 40512-4052
Ph: 606-288-4960
Fax: 606-288-4999
Internet: www.asphaltinstitute.org
e-mail: asphalti@asphaltinstitute.org

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)

600 No. 18th St.
P.O. Box 2641
Birmingham, AL 35291-0992
Ph: 205-257-2530
Fax: 205-257-2540
Internet: <http://www.aeic.org/index.htm>
E-Mail: veazey-white@apc.com

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CDT)

Publication Distribution Unit
1900 Royal Oaks Dr.
Sacramento, CA 95815
Ph: 916-445-3520 or 916-227-7000 (CA Transportation Lab)
Fax: 916-324-8997

CORPS OF ENGINEERS (COE)

Order from:

U.S. Army Engineer Waterways Experiment Station
ATTN: Technical Report Distribution Section, Services
Branch, TIC
3909 Halls Ferry Rd.
Vicksburg, MS 39180-6199
Ph: 601-634-2571
Fax: 601-634-2506

NOTE: COE Handbook for Concrete and Cement (Documents w/prefix CRD-C) (1949-present; 2 Vol) free to Government offices; \$10.00 plus \$8.00 per yr for 4 qtrly supplements to others). Individual documents, single copies free. Order from address above.

DEPARTMENT OF TRANSPORTATION, NEW JERSEY (NJDOT)

Configuration Management
E&O Building, 1st Floor
1035 Parkway Avenue
CN 600

Trenton, NJ 08625-0600

Ph: 609-530-5587

Internet:

http://www.state.nj.us/transportation/cpm/NJDOT%20Standard%20Specifications/standard_specs.htm

FACTORY MUTUAL ENGINEERING AND RESEARCH (FM)

1151 Boston-Providence Turnpike

P.O. Box 9102

Norwood, MA 02062-9102

Ph: 617-255-4681

Fax: 617-255-4359

Internet: <http://www.factorymutual.com>

FEDERAL AVIATION ADMINISTRATION (FAA)

Order from:

Superintendent of Documents
U. S. Government Printing Office
Washington, DC 20402
Ph: 202-512-1800
Fax: 202-512-1356
For free documents, order from:
Federal Aviation Administration
Dept. of Transportation
ATTN: General Services Section M-45
400 Seventh St., SW
Washington, DC 20590-0001
Ph: 202-619-8925
Fax: 202-619-8978
Internet: www.faa.gov

FEDERAL SPECIFICATIONS (FS)

Order from:

General Services Administration

Federal Supply Service Bureau
470 L'Enfant Plaza, S.W.
Washington, DC 20407
Ph: 202-619-8925
Fax: 202-619-8978
Internet: <http://pub.fss.gsa.gov/>

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

445 Hoes Ln, P. O. Box 1331
Piscataway, NJ 08855-1331
Ph: 732-981-0060 OR 800-701-4333
Fax: 732-981-9667
Internet: <http://www.standards.ieee.org>
E-mail: customer.service@ieee.org

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

1300 N. 17th St., Suite 1847
Rosslyn, VA 22209
Ph: 703-841-3200
Fax: 703-841-3300
Internet: <http://www.nema.org/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

One Batterymarch Park P.O. Box 9101
Quincy, MA 02269-9101
Ph: 800-344-3555
Fax: 800-593-6372
Internet: <http://www.nfpa.org>
NOTE: The complete set of 1997 NFPA National Fire Codes (13 Vol.)
is available for \$835.00.

RURAL UTILITIES SERVICE (RUS)

ATTN: Publications
14th and Independence Ave., SW, Room 4028-S
Washington, DC 20250
Ph: 202-720-8674 OR 202-720-8679
Fax: 202-205-3654
Internet: www.usda.gov/rus

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
Internet: www.sspc.org
NOTE: SSPC documents, except as noted otherwise, are available
only as a part of the 1995 Steel Structures Painting Manual, 7th
Edition @ \$115.00.

UNDERWRITERS LABORATORIES (UL)

333 Pfingsten Rd.
Northbrook, IL 60062-2096
Ph: 847-272-8800

Fax: 847-272-8129
Internet: <http://www.ul.com/>

Note: First price is for the standard only. Second price is for
the standard including the Revision Subscription Service.

-- End of Section --

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SECTION 01200

CONTRACTOR WARRANTY MANAGEMENT

PART 1 GENERAL

1.1 GENERAL

In order to insure that the Government systematically receives all warranties of construction, equipment and system to which it is entitled, the Contractor shall execute all actions as required by above references and as contained herein.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Warranty Plan; GA-A.

At least 30 days before the planned warranty meeting, the Contractor shall submit a warranty plan containing the information specified herein for Government approval.

PART 2 PRODUCTS (Not applicable)

PART 3 EXECUTION

3.1 POST-COMPLETION INSPECTIONS

For purposes of management of construction warranties, the Government conducts four and nine month warranty inspections with using agencies. The Contractor is encouraged to attend these inspections in order to better manage any warranty items for which it may be responsible.

3.2 TAGGING OF EXTENDED WARRANTY ITEMS

The Contractor shall install tags to identify items protected by extended warranty, i.e., longer than the one year general warranty of construction. The tags shall be minimum 3 inches by 5 inches in size, machine-printed in minimum 14-point type, and shall be waterproof. Tags shall be attached to equipment if accessible or to accessible control panel, etc. As a minimum, tags shall indicate the following information:

"Extended Warranty Item:"

Name of Item

Name of System with which associated, number designation within system, or other identifier

Model Number

Serial Number

Start and end Dates of Warranty

Contract Number

Contractor Name
Point of Contact name, organization and telephone number

3.3 POSTING OF INSTRUCTIONS

In addition to any posting of operating procedures as may be required elsewhere in this contract, any equipment or system for which proper operation of maintenance is critical in order to preserve warranties, prevent damage, or for reasons of safety shall have proper operating procedures posted near the equipment or near the operating point. Instructions shall be protected by 1/16 inch thick plastic sheet. As a minimum, such equipment or system shall include:

- Electrical Substations
- Transformers
- Electrical Generators
- Major HVAC System components including chillers, air-handlers, fans, etc.
- HVAC Control Panel
- Boilers
- Air Compressors

3.4 WARRANTY PLAN

The Warranty Plan shall include all required actions and documents to assure the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. As a minimum the plan shall include:

- a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractor's subcontractors or suppliers involved.
- b. Listing and status of O&M manuals and as-built drawings, and expected delivery dates.
- c. Listing and status of all training to be provided to Government personnel, whether specified by contract or required by manufacturers.
- d. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.
- e. A list of each warranted equipment, item, feature of construction or system indicating:
 - Name of item.
 - Model and serial numbers.
 - Location where installed.
 - Names of manufacturers or suppliers and phone numbers.
 - Names, addresses, and telephone numbers of sources of spare parts.
 - Warranties and terms of warranty. This shall include one-year

overall warranty of construction as required by reference 1.1a.
Clearly indicate which items have extended warranties.
Cross-reference to warranty certificates as applicable.
Starting point and duration of warranty period.
Summary of maintenance procedures required to continue warranty in force.
Cross-reference to specific pertinent Operation and Maintenance manuals.
Organization, names, and phone numbers of persons to call for warranty service.
Typical response time and repair time expected for various warranted equipment.

f. The Contractor's plans for attendance at the four and nine month post-construction warranty inspections conducted by the Government.

g. Procedure and status of tagging of all equipment covered by extended warranty.

h. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

3.5 WARRANTY MEETING

At least 14 days prior to the 80% completion point of this contract (or deliverable phase thereof), the Contractor shall notify the Government representative for the purpose of scheduling a meeting to clarify understandings of responsibilities with respect to warranties to which the Government is entitled. The Government and Contractor shall attend the warranty meeting, as well as any subcontractors or suppliers involved in the warranty process. The Warranty Plan shall have already been submitted and approved by the Government before the warranty meeting can take place, and shall be the basis of the meeting's agenda.

-- End of Section --

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SECTION 01311

PROJECT SCHEDULE

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Schedules

Initial Project Schedule; GA-A. Revised Project Schedule; GA-A. Periodic Schedule Updates; GA-A.

Project Schedules shall be in the form of chart consisting of a series of bars graphically indicating the sequence proposed to accomplish each work feature or operation, and shall be updated on a monthly basis.

Progress Curve (S-Curve); GA-A.

Progress curve shall reflect the intended schedule for completion of the work.

SD-09 Reports

Narrative Reports with Schedule Updates; GA-A.

Narrative report shall be submitted with Schedule Updates as required to indicate any problem areas, anticipated delays, impact on schedule, and corrective action.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

Pursuant to the Contract Clause: SCHEDULES FOR CONSTRUCTION CONTRACTS and the Special Contract Requirement: SCHEDULING AND DETERMINATION OF PROGRESS, the contractor shall prepare and submit for approval a practicable project schedule. The schedule shall be submitted within five (5) days after the receipt of Notice to Proceed or as otherwise determined by the Contracting Officer.

3.2 BASIS FOR PAYMENT

The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis for all progress payments.

3.3 PROJECT SCHEDULE

The Project Schedule shall be in the form of chart consisting of a series of bars graphically indicating the sequence proposed to accomplish each work feature or operation. Each bar shall represent a work feature, system or series of activities within the construction project. The chart shall be prepared to show the starting and completion dates of all work features on a linear horizontal time scale beginning with date of Notice to Proceed and indicating calendar days to completion. Interdependence of status of activities shall be shown. Horizontal time scale shall allow identification of the first work day of each week, which shall be identified. Space between bars shall be allowed for future revisions and notations.

3.4 PROGRESS CURVE

With the Project Schedule the contractor shall also submit for approval a progress curve which reflects the intended schedule for completion of the work. The progress curve (S-Curve) shall be plotted to reflect Cumulative Progress (Percent) based on placement along the y-axis and Time along the x-axis.

3.5 SCHEDULE AND PROGRESS CURVE UPDATED

Approved Schedule and Progress Curve shall be updated monthly during the entire duration of construction. Not later than four days after the Monthly Progress Meeting the contractor shall submit updated Project Schedule and Progress Curve. The updated versions shall include all approved contract revisions, progress of each activity to date of submission, and adjustments. Contractor shall also provide a very brief narrative report as required to indicate any problem areas, anticipated delays, impact on schedule, and corrective action.

3.6 PERIODIC PROGRESS MEETINGS

Progress meetings to discuss payment shall include a monthly on-site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the contractor shall describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate.

-- End of Section --

SECTION 01330

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

This section covers procedures to be used in making submittals called for in the contract documents. In contracts which contain specific "Contractor Quality Control" requirements, the Contractor's Quality Control Representative shall carry out duties associated with submittal procedures.

In contract which do not contain specific CQC requirements, reference to "CQC Representative" shall be interpreted as reference to the Contractor's authorized representative, and references to "CQC Requirements" or "CQC Clauses" shall be interpreted as "requirements or clauses elsewhere in the contract."

1.2 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers as follows:

SD-01 Data

SD-04 Drawings

SD-06 Instructions

SD-07 Schedules

SD-08 Statements

SD-09 Reports

SD-13 Certificates

SD-14 Samples

SD-18 Records

SD-19 Operation and Maintenance Manuals

1.3 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1 Government Approved (GA)

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.3.2 Information Only (FIO)

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.4 REVIEWER CODES

Reviewer codes on the Submittal Register (ENG Form 4288) are identified as follows:

A - Area Engineer

E - Engineering

1.5 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the CQC requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause "Changes" shall be given promptly to the Contracting Officer.

1.7 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including

(but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.2 SUBMITTAL REGISTER (ENG FORM 4288)

At the end of this section is one set of ENG Form 4288 listing items of equipment and materials for which submittals are required by the specifications; this list may not be all inclusive and additional submittals may be required. Columns "d" through "r" have been completed by the Government; the Contractor shall complete columns "a" and "s" through "u" and submit the forms (hard copy plus associated electronic file) to the Contracting Officer for approval within 30 calendar days after Notice to Proceed (15 days if construction time is 180 days or less). If the Government supplies the ENG Form 4288 on the Resident Management System (RMS) electronic format, the contractor will be required to process and update the 4288 electronically, and make appropriate electronic submissions to the Government. Otherwise, the Contractor will be given the submittal register as a diskette containing the computerized ENG Form 4288 and instructions on the use of the diskette. In both cases, the Contractor shall update the 4288 electronically, and shall submit it to the Government together with the monthly payment request. The approved submittal register will become the scheduling document and will be used to control submittals throughout the life of the contract. The submittal register and the progress schedules shall be coordinated.

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item. If the contractor is required in another section of the specifications to utilize the RMS system, the contractor will be required to generate and process this form electronically using the RMS system.

3.5 SUBMITTAL PROCEDURE

3.5.1 General Procedure

Paragraph (g) of Contract Clause: "Specifications and Drawings for Construction," is modified as specified herein. While submittals referred to in the text may use the wording "submitted to the Contracting Officer", submittals will be reviewed as indicated in column "p" of the Submittal Register (ENG Form 4288). Submittals shall be made as follows:

The Contractor shall submit to the Area Engineer (A) or to Engineering (E), by the most expedient means, a total of seven copies of shop drawings and other submittals listed on the Submittal Register (ENG Form 4288). When submitting to Engineering, six copies shall be submitted to Engineering and one copy shall be submitted to the Area Engineer. When submitting to the Area Engineer, all seven copies shall be submitted. The Contractor shall be responsible for all costs incurred in transmitting the required information to Engineering and Area Engineer for review in the submittal process.

Submittals for Area Engineer review shall be given to the Area Engineer on-site. Submittals for Engineering review shall be made to the following address:

US Army Corps of Engineers
Philadelphia District
Attn: CENAP-EC-DG (DePasquale)
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control its procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and three copies of the submittal will be returned to the Contractor.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples

for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

| |
|--|
| <p>CONTRACTOR</p> <p>(Firm Name)</p> <p>_____ Approved</p> <p>_____ Approved with corrections as noted on submittal data and/or attached sheets(s).</p> <p>SIGNATURE: _____</p> <p>TITLE: _____</p> <p>DATE: _____</p> |
|--|

-- End of Section --

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INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.
2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.
3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.
4. Submittals requiring expeditious handling will be submitted on a separate form.
5. Separate transmittal form will be used for submittals under separate sections of the specifications.
6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".
7. Form is self-transmittal, letter of transmittal is not required.
8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.
9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

| | | | | | |
|---|----|--|----|----|---|
| A | -- | Approved as submitted. | E | -- | Disapproved (See attached). |
| B | -- | Approved, except as noted on drawings. | F | -- | Receipt acknowledged. |
| C | -- | Approved, except as noted on drawings. Refer to attached sheet resubmission required. | FX | -- | Receipt acknowledged, does not comply as noted with contract requirements. |
| D | -- | Will be returned by separate correspondence. | G | -- | Other (<i>Specify</i>) |

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

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CONTRACT NO.

TITLE AND LOCATION

CONTRACTOR

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Construction and Repair of Taxiways, Army National Guard Area

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SUBMITTAL REGISTER

(ER 415 1-10)

CONTRACT NO.
DACA61-01-B-0001

TITLE AND LOCATION

CONTRACTOR

SPECIFICATION SECTION

Construction and Repair of Taxiways, Army National Guard Area

02760

| ACTIVITY NO | TRANS-MITTAL NO. | ITEM NO | SPECIFICATION PARAGRAPH NUMBER | DESCRIPTION OF ITEM SUBMITTED | TYPE OF SUBMITTAL | | | | | | | | | | | | | CLASSI- FICATION | REVIEWER | CONTRACTOR SCHEDULE DATES | | | CONTRACTOR ACTION | | | GOVERNMENT ACTION | | REMARKS | | | | | | | |
|----------------|---------------------|------------|--------------------------------------|--|-------------------|-------------|------------|--------------|-----------------|-----|-------------|------------|--------|--------------------------|--------------------------|------|------|---------------------|----------|---------------------------------|------|------|----------------------|----|----|----------------------|----|---------|----|----|----|----|----|----|----|
| | | | | | DRAWINGS | INSTRUMENTS | STATEMENTS | CERTIFICATES | RECOMMENDATIONS | O&M | INFORMATION | GOVERNMENT | SUBMIT | APPROVAL NEEDED BY | MATERIAL NEEDED BY | CODE | DATE | | | SUBMIT TO GOVERN- MENT | CODE | DATE | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | f. | g. | h. | i. | j. | | k. | l. | m. | n. | o. | p. | q. |
| | | | 1.2 | Manufacturer's Recommendations for Hot-Poured and Cold-Poured Sealants | | X | | | | | | | | | | | X | E | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Construction Equipment List | | | X | | | | | | | | | | X | E | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Workplan | | | | X | | | | | | | | | X | E | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Hot-Poured and Cold-Poured Sealant | | | | | X | | | | | | | | X | A | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Primer | | | | | X | | | | | | | | X | A | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Backup Materials | | | | | X | | | | | | | | X | A | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Bond Breaking Tapes | | | | | X | | | | | | | | X | A | | | | | | | | | | | | | | | | | |
| | | | 1.2 | Hot-Poured and Cold-Poured Materials | | | | | | X | | | | | | | X | A | | | | | | | | | | | | | | | | | |

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Construction and Repair of Taxiways, Army National Guard Area

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SECTION 01356

STORMWATER POLLUTION PREVENTION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM D 751 | (1998) Coated Fabrics |
| ASTM D 1117 | (1997) Nonwoven Fabrics |
| ASTM D 1682 | Tensile Strength and % Strength Retention of material after 1000 hours of exposure in Xenon Arc Weatherometer |
| ASTM D 3787 | (1989) Bursted Strength of Knitted Goods: Constant-Rate-of-Traverse (CRT), Ball Burst Test |

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-14 Samples

Geotextile Fence; GA-A.

Submit sample, approx. one square foot.

SD-13 Certificates

Stone for Rock Filters; GA-A.

Certification of compliance.

PART 2 PRODUCTS

2.1 GEOTEXTILE

Provide geotextile sedimentation control fence to meet the following

requirements: Geotextile, Class 3.

Provide geotextile erosion control fabric, to meet the following requirements: Geotextiles, Class 2.

Table I
Geotextile Physical Requirements*

CONSTRUCTION CLASS

| Fabric Property | Test Method | Class 2 | Class 3 |
|--|--|------------------------|-------------------------|
| | | Erosion Control Type B | Sediment Control Type B |
| 1. Grab Tensile Strength, lbs. | ASTM D 1682(1") | 120 | 120 |
| 2. Grab Tensile Elongation, % | ASTM D 1682 | 15 | 15 |
| 3. Burst Strength, psi | ASTM D 751 | 200 | 200 |
| | (Diaphragm Method) | | |
| 4. Puncture, lbs. | ASTM D 3787 | 40 | 40 |
| | (5/16" flatrod) | | |
| 5. Trapezoid Tear Strength, lbs. | ASTM D 1117 | 50 | 50 |
| 6. Water Permeability, k, cm/sec. | PA Test Method No. 314 | 0.01** | - |
| 7. Abrasion Resistance, lbs. | ASTM D 1117 & ASTM D 1682 | 25 | - |
| 8. Sewn Seam Breaking Strength, lbs. | ASTM D 1682 | 120 | - |
| 9. Ultraviolet Resistance, Strength Retention, % | ASTM D 1682, after 500 hrs. of Xenon or Atlas Twin Arc Weather-o-meter | - | 70% of 1. |

*The numerical values indicate the average minimum roll value or the minimum to maximum range. Average minimum roll value for Class 3 material is in the warp direction only.

**k fabric \geq 10 times k soil.

2.2 CONSTRUCTION ENTRANCE

The geotextile for the stabilized construction entrance/equipment wash shall be as specified in Section 02215 GEOTEXTILE.

2.3 STONE

Stone consists of hard, tough, durable, uncoated, inert particles, reasonably free from clay, silt, vegetation, salty texture, cleavage planes, or other substances determined to be deleterious. Such substances as chert, gypsum, iron sulfide, amorphous silica and hydrated iron oxide are considered deleterious. Gradation of stone shall be as specified for AASHTO No. 1.

PART 3 EXECUTION

3.1 EROSION CONTROL MEASURES

Erosion and sedimentation control measures must be in place and approved prior to any earthwork activities. See drawings for specific details of placement of erosion and sedimentation control devices.

3.2 MAINTENANCE OF EROSION CONTROL MEASURES

After each storm, once ponded water has receded, erosion and sedimentation devices must be cleaned of all sediments at no additional cost to Government. Geotextile fence which no longer properly functions will be replaced at the direction of the Engineer and at no additional cost to the Government. Maintain the alignment and condition of the geotextile fence, as necessary, throughout its use on the project. Relocate geotextile fence as required to accommodate construction operations.

3.3 DUST CONTROL

Employ construction methods and means that will keep flying dust to the minimum. Provide for the laying of water on the project, and on roads, streets, and other areas immediately adjacent to the project limits, wherever traffic, or buildings that are occupied or in use, are affected by such dust caused by hauling or other operations.

Provide for prompt removal from existing pavements of all dirt and other materials that have been spilled, washed, tracked or otherwise deposited thereon by hauling and other operations whenever the accumulation is sufficient to cause the formation of mud, interfere with drainage, damage pavement or create a traffic hazard.

3.4 CONSTRUCTION ENTRANCE

3.4.1 General

A tire cleaning pad (construction entrance) shall be constructed using the geotextile and stone. The pad shall be in place prior to any excavation or earthmoving operations. In the event that the pad becomes clogged with soil, it shall either be replaced or supplemental stone added. At the completion of construction, the cleaning pad shall be removed and the area topsoiled and seeded.

3.4.2 Geotextile and Stone Placement

At the time of installation, the geotextile will be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage. The geotextile shall be placed with the long dimension perpendicular to the centerline and shall be laid smooth and free of tension, stress, folds, wrinkles or creases. The strips shall be placed to provide a minimum width of 24 inches of overlap for each joint. The placement procedures require that the length of the geotextile

be slightly greater than the entrance width. The geotextile shall be protected from damage during the placement of the stone by limiting the height of drop of materials to no greater than 1-foot unless otherwise approved by the Contracting Officer.

3.5 TEMPORARY SEEDING

All stockpiles, inactive and disturbed areas shall be seeded if left exposed for more than 10 days.

-- End of Section --

SECTION 01410

ENVIRONMENT PROTECTION

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

The Contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of land, water, and air, and includes management of visual aesthetics, noise, solid waste, as well as other pollutants. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

1.1.1 Subcontractors

The Contractor shall ensure compliance with this section by subcontractors.

1.1.2 Permits

The Contractor shall obtain all needed permits or licenses. The Government will not obtain any permits for this project; see Contract Clause PERMITS AND RESPONSIBILITIES. The State department of natural resources, through the national pollutant discharge elimination system (NPDES), requires general permits, a notice of intent, and a notice of discontinuation. The Contractor shall be responsible for implementing the terms and requirements of the appropriate permits as needed and for payment of all fees.

1.1.3 Preconstruction Survey

Prior to starting any onsite construction activities, the Contractor and the Contracting Officer shall make a joint condition survey after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs and grassed areas immediately adjacent to work sites and adjacent to the assigned storage area and access routes as applicable. This report will be signed by both the Contracting Officer and the Contractor upon mutual agreement as to its accuracy and completeness.

1.1.4 Meetings

The Contractor shall meet with representatives of the Contracting Officer to alter the environmental protection plan as needed for compliance with the environmental pollution control program.

1.1.5 Notification

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and

take such action when approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions.

1.1.6 Litigation

If work is suspended, delayed, or interrupted due to a court order of competent jurisdiction, the Contracting Officer will determine whether the order is due in any part to the acts or omissions of the Contractor, or subcontractors at any tier, not required by the terms of the contract. If it is determined that the order is not due to Contractor's failing, such suspension, delay, or interruption shall be considered as ordered by the Contracting Officer in the administration of the contract under the contract clause SUSPENSION OF WORK.

1.1.7 Previously Used Equipment

The Contractor shall thoroughly clean all construction equipment previously used at other sites before it is brought into the work areas, ensuring that soil residuals are removed and that egg deposits from plant pests are not present; the Contractor shall consult with the USDA jurisdictional office for additional cleaning requirements.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Environmental Protection Plan; GA-A.

The Contractor shall submit an environmental protection plan within 15 days after receipt of the notice to proceed. Approval of the Contractor's plan will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures. The environmental protection plan shall include, but shall not be limited to, the following:

- a. A list of Federal, State, and local laws, regulations, and permits concerning environmental protection, pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits.
- b. Methods for protection of features to be preserved within authorized work areas like trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archaeological, and cultural resources.
- c. Procedures to be implemented to provide the required environmental protection, to comply with the applicable laws and regulations, and to correct pollution due to accident, natural causes, or failure to follow the procedures of the environmental protection plan.

- d. Location of the solid waste disposal area.
 - e. Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
 - f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
 - g. Traffic control plan including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather, and the amount of mud transported onto paved public roads by vehicles or runoff.
 - h. Methods of protecting surface and ground water during construction activities.
 - i. Plan showing the proposed activity in each portion of the work area and identifying the areas of limited use or nonuse. Plan should include measures for marking the limits of use areas.
 - j. Drawing of borrow area location. Protection measures required at the work site shall apply to the borrow areas including final restoration for subsequent beneficial use of the land.
 - k. A recycling and waste prevention plan with a list of measures to reduce consumption of energy and natural resources; for example: the possibility to shred fallen trees and use them as mulch shall be considered as an alternative to burning or burial.
1. Training for Contractor's personnel during the construction period.

1.3 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify the land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

1.3.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

1.3.2 Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

1.3.3 Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Contracting Officer.

1.3.4 Disturbed Areas

The Contractor shall effectively prevent erosion and control sedimentation through approved methods including, but not limited to, the following:

- a. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
- b. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated on the drawings.

1.3.5 Contractor Facilities and Work Areas

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Contracting Officer. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plant and/or work areas shall be controlled to protect adjacent areas from despoilment.

1.4 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

1.4.1 Washing and Curing Water

Waste waters directly derived from construction activities shall not be allowed to enter water areas. Waste waters shall be collected and placed in retention ponds where suspended material can be settled out or the water evaporates to separate pollutants from the water. Analysis shall be performed and results reviewed and approved before water in retention ponds is discharged.

1.4.2 Fish and Wildlife

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

1.5 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with the State's rules and all Federal emission and performance laws and standards.

1.5.1 Particulates

Dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, plant sites, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

1.5.2 Hydrocarbons and Carbon Monoxide

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

1.5.3 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

1.5.4 Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the McGuire AFB's rules.

1.6 WASTE DISPOSAL

Disposal of wastes shall be as specified below.

1.6.1 Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers

which are emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

1.6.2 Chemical Wastes

Chemicals shall be dispensed ensuring no spillage to ground or water. Periodic inspections of dispensing areas to identify leakage and initiate corrective action shall be performed and documented. This documentation will be periodically reviewed by the Government. Chemical waste shall be collected in corrosion resistant, compatible containers. Collection drums shall be monitored and removed to a staging or storage area when contents are within 6 inches of the top. Wastes shall be disposed of in accordance with Federal and local laws and regulations.

1.6.3 Hazardous Wastes

The Contractor shall take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing and shall collect waste in suitable containers observing compatibility. The Contractor shall transport hazardous waste off Government property and dispose of it in compliance with Federal and local laws and regulations. Spills of hazardous or toxic materials shall be immediately reported to the Contracting Officer. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility.

1.7 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Contracting Officer if any has been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out.

The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during excavation or other construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Contracting Officer.

1.8 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction.

1.9 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work areas.

1.10 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

1.11 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

PART 2 PRODUCTS (Not Applicable

PART 3 EXECUTION (Not Applicable

-- End of Section --

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SECTION 01420

SAFETY

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

CORPS OF ENGINEERS (COE)

EM 385-1-1 (Sep 1996) Safety and Health Requirements Manual

EM 385-1-1 and its changes are available at <http://www/hq/usace.army.mil> (at the HQ homepage, select Safety and Occupational Health). The Contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Site Safety Officer Qualifications; GA-A.

Name and qualifications of the Contractor's proposed site safety officer.

Accident Prevention Plan; GA-A.

Within fifteen (15) calendar days after receipt of Notice to Proceed, and at least ten (10) calendar days prior to the Preconstruction Safety Conference, four (4) copies of the Accident Prevention Plan shall be submitted for approval.

Activity Hazard Analysis; GA-A.

Prior to beginning each major phase of work, an Activity Hazard Analysis shall be prepared by the Contractor performing that work, and submitted for approval.

SD-09 Reports

Daily Safety Inspection Logs; GA-A.

Daily safety inspection logs will be attached to and submitted with the Inspection Records.

Accident Reports; FIO

A written report for all accidents utilizing ENG FORM 3394 shall be submitted within 24 hours following such accidents.

OSHA 200 Log; FIO

Contractor's OSHA 200 Log of Injuries shall be submitted monthly.

1.3 SAFETY

The contractor shall comply with all applicable Federal, State, and local safety and occupational health laws and regulations. Applicable provisions of EM 385-1-1 will be applied to all work under this contract.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 ACCIDENT PREVENTION PROGRAM

Within fifteen (15) calendar days after receipt of Notice to Proceed, and at least ten (10) calendar days prior to the Preconstruction Safety Conference, four (4) copies of the Accident Prevention Plan shall be submitted for review and acceptance by the Contracting Officer or the Contracting Officers Representative (COR). The accident prevention program shall be prepared in the format outlined in Appendix A of EM 385-1-1, "Minimum Basic Requirements for Accident Prevention Plan".

3.2 HAZARD ANALYSIS

Prior to beginning each major phase of work, an Activity Hazard Analysis shall be prepared by the Contractor performing that work, submitted for review, and accepted by the Government. The format shall be in accordance with EM 385-1-1, figure 1-1. A major phase of work is defined as a operation involving a type of work presenting hazards not experienced in previous operations or where a new contractor or work crew is to perform. (See Contractor Quality Control specifications for further guidance regarding coordination of "Activities" and "Principal Steps" indicated in the Activity Hazard Analysis with Contractor Quality Control activities.) The analysis shall define the activities to be performed and identify the sequence of work, the specific hazards anticipated, and the control measures to be implemented to eliminate or reduce each hazard to an acceptable level. Work shall not proceed on that phase until the activity hazard analysis has been accepted and a preparatory meeting has been conducted by the Contractor to discuss its contents with everyone engaged in the activities, including the government on-site representative(s). The activity hazard analyses shall be continuously reviewed and when appropriate modified to address changing site conditions or operations, with the concurrence of the site safety representative, the site superintendent, and the Contracting Officer. Activity hazard analyses shall be attached to and become part of the accident prevention plan. It may also be developed prior to each phase of work undertaken in the contract.

Hazard analysis shall be used to identify and evaluate all substances,

agents, or environments that present hazards and recommend control measures. Engineering and administrative controls shall be used to control hazards; in cases where engineering or administrative controls are not feasible, personal protective equipment may be used.

Information contained in MSDS (Material Safety Data Sheets) shall be incorporated in the hazard analysis for the activities in which hazardous or toxic materials will be used, or generated (e.g. fiberglass, crystalline silica, metal dust or fume, etc.).

3.3 SITE SAFETY OFFICER

The Contractor shall identify an individual directly employed by the Contractor as Site Safety Officer responsible to the Contractor to implement and continually enforce the Accident Prevention Plan. The site safety officer shall have the authority to suspend operational activities if the health and safety of personnel are endangered, and to suspend an individual from operational activities for infractions of the Accident Prevention Plan.

3.3.1 Qualifications

The name, qualifications (training and experience) of the designated Site Safety Officer shall be included in the Accident Prevention Plan. The Site Safety Officer shall have the following qualifications:

- a. A minimum of 5 years construction experience, with at least 2 years experience in implementing safety programs at construction sites for projects of comparable scope and complexity.
- b. Documented experience in construction techniques and construction safety procedures.
- c. Working knowledge of Federal and state occupational health and safety regulations.
- d. Specific training in excavation safety, fall protection, and confined space.
- e. CPR/First Aid certification (current).
- f. Familiarity with and ability to use and implement the Corps of Engineers Safety Manual EM 385-1-1.

3.3.2 Other Requirements

Other sections of the contract documents may also require separate, specially qualified individuals in such areas as chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, quality control, etc.

3.4 SITE INSPECTIONS

The site safety officer shall perform daily inspections of the job sites and the work in progress to ensure compliance with EM 385-1-1 and to determine the effectiveness of the accident prevention plan. Daily inspection logs shall be used to document inspections noting safety and health deficiencies, deficiencies in the effectiveness of the accident prevention plan, and corrective actions including timetable and

responsibilities. The daily inspection logs will be attached to and submitted with the Daily Quality Control Reports or may be incorporated in the daily CQC report. Each entry shall include date, work area checked, employees present in work area, protective equipment and work equipment in use, special safety and health issues and notes, and signature of the preparer.

3.5 HIGHLIGHTED PROVISIONS

In addition to those items contained in EM 385-1-1, Appendix A, include the following items in the accident prevention plan:

3.5.1 Hard Hat Area

A statement that the jobsite is classified a "hard hat" area from start to finish.

3.5.2 Sanitation and Medical Requirements

Estimate the greatest number of employees, supervisors, etc., to be working at peak construction period, including subcontractor personnel. Include sanitation requirements and medical facilities identified for the job site. If a medical facility or physician is not accessible within five minutes of an injury to a group of two or more employees for the treatment of injuries, identify at least two or more employees on each shift who are qualified to administer first aid and CPR.

3.5.3 Equipment Inspection

The type of inspection program on cranes, trucks, and other types of construction equipment the Contractor plans to implement. Who will be responsible for the inspection and how the Contractor will control equipment of sub-contractors and equipment bought to the site by rental companies. Types of records to be kept: Copies of records of all equipment inspections will be kept at the job site for review by the designated authority.

3.5.4 Crane and Derrick Operators

Written proof of qualification for all crane and derrick operators in accordance with EM 385-1-1, 16.C.04. Qualification shall be by written (or oral) examination and practical operating examination unless the operator is licensed by a state or city licensing agency for the particular type of crane or derrick. Proof of qualification shall be provided by the qualifying source.

3.6 ACCIDENT REPORTS

The contractor shall immediately report all accidents by telephone to the COR.

3.6.1 Required Reports

The Contractor will provide an initial written report of the accident to the COR within 24 hours. The Contractor shall complete and submit ENG Form 3394 for all accidents involving lost work time, medical treatment, and/or property damage within 24 hours of the accident. The report shall accurately represent circumstances of the accident, cause of the accident, extent of medical treatment, extent of injuries, and steps to prevent

occurrence of similar accidents. The hazard analysis shall be attached to the report.

3.6.2 Daily Records

Daily records of all first aid treatment not otherwise reportable shall be maintained at the job site and furnished to the designated authority upon request. Records shall also be maintained of all exposure and accident experience incidental to the work (OSHA Form 200 or equivalent as prescribed by 29 CFR 1904).

3.7 MONTHLY EXPOSURE REPORTS

The Contractor shall submit to the COR no later than the 1st day of each month, a compilation of manhours worked each month by the prime contractor and each subcontractor. In addition, the Contractor shall report the number of accidents, severity, class of accidents, and lost-time work days for each month.

3.8 CLEAN-UP

The Contractor's Accident Prevention Plan shall identify the individual's responsible for cleanup and shall establish a regular housekeeping procedure and schedule. If the COR determines that cleanup is not being performed satisfactorily, the Contractor shall establish a work crew to perform the continuous cleanup required by the contract clause titled: CLEANING UP. The number of individuals appointed to the cleanup work crew shall be increased as required in order to render adequate cleanup.

3.9 FOCUS AREAS

To supplement and emphasize the requirements of EM 385-1-1, the following is provided and shall be met as applicable.

3.9.1 Electrical Work

3.9.1.1 General

Electrical work shall not be performed on or near energized lines or equipment unless specified in the plans and specifications, and approved by the COR. Plan and layout of proposed temporary power to the construction site shall be submitted and approved by the COR before work will be permitted.

Upon request by the Contractor, arrangements will be made for deenergizing lines and equipment so that work may be performed. All outages shall be requested through the COR a minimum of 14 days, unless otherwise specified, prior to the beginning of the specified outages. Dates and duration will be specified.

3.9.1.2 Energized Lines

If approved by the COR, the following work may be performed with the lines energized using certified hot line equipment on lines above 600 volts, when the following conditions have been met:

- a. Work below the conductors no closer than the clearance required in EM 385-1-1 from the energized conductors.

b. Setting and connection of new pre-trimmed poles in energized lines which do not replace an existing pole.

c. Setting and removing transformers or other equipment on poles.

d. Installation or removal of hot line connectors, jumpers, dead-end insulators for temporary isolation, etc., which are accomplished with hot line equipment from an insulated bucket truck.

3.9.1.3 Energized Line Work Plan

The Contractor shall submit a plan, in writing, describing his/her method of operation and the equipment to be used on energized lines. Proper certification from an approved source of the safe condition of all tools and equipment will be provided with the plan. The work will be planned and scheduled so that proper supervision is maintained. Emergency procedures, including communication, for disconnecting power in the event of an accident will be outlined in the plan. The Contractor will review his/her plan with the COR prior to being granted permission to perform the work.

No work on lines greater than 600 volts will be performed from the pole or without the use of an insulated bucket truck.

No work will be done on overbuilt lines while underbuilt lines are energized, except for temporary isolation and switching.

3.9.1.4 Electrical Tools and Cords

Hand held electrical tools shall be used only on circuits protected by ground fault circuit interrupters for protection of personnel. All general use extension cords shall be hard usage or extra hard usage as specified in Table 11-1 of EM 385-1-1. Damaged or repaired cords shall not be permitted.

3.9.1.5 Temporary Power

Temporary electrical distribution systems and devices shall be checked and found acceptable for polarity, ground continuity, and ground resistance before initial use and after modification. GFI outlets shall be installed and tested with a GFI circuit tester (tripping device) prior to use. Portable and vehicle mounted generators shall be inspected for compliance with EM 385-1-1 and NFPA 70. All electrical equipment located outdoors or in wet locations shall be enclosed in weather proof enclosures in accordance with EM 385-1-1. Records of all tests and inspections will be kept by the contractor and made available on site for review by the designated authority. A sketch of proposed temporary power shall be submitted for acceptance.

3.9.2 Rollover Protective Structures (ROPS)

Seat belts and ROPS shall be installed on all construction equipment as required by paragraph 16.B.12 of EM 385-1-1. The operating authority will furnish proof from the manufacturer or licensed engineer that ROPS meets the applicable SAE standards cited in EM 385-1-1, pg. 257.

3.9.3 Radiation Permits or Authorizations

Contractors contemplating the use of a licensed or DOD regulated radiological device or radioactive material on a DOD installation will secure appropriate permit or authorization from the Department of Army or

Department of the Air Force, as applicable. A 45-day lead-time should be programmed for obtaining the necessary authorization or permit. When requested, the COR will assist the Contractor in obtaining the required permit or authorization.

The Contractor shall develop and implement a radiation safety program to comply with EM 385-1-1, Section 06.E. Provisions for leak tests, authorized personnel, transport certificates, etc. will be addressed in the radiation safety program.

3.9.4 Elevating Work Platforms

All elevating work platforms shall be designed, constructed, maintained, used, and operated in accordance with ANSI A92.3, ANSI A92.6, ANSI A92.5 and EM 385-1-1, Sections 22.J and 16.A.

Only personnel trained in the use of elevating work platforms shall be authorized to use them. A list of authorized users will be maintained by the contractor at the job site. The list will be updated to remain current and made available for review on site by the designated authority. Personnel safety belts must be worn.

3.9.5 Fall Protection

Fall protection in the form of standard guardrails, nets, or personal fall arrest systems will be provided for all work conducted over 6 feet in height. The contractor will submit his/her proposed method of fall protection to the COR as part of the Job Hazard Analysis for acceptance. If the contractor deems that conventional fall protection as described above is not feasible, or creates a greater hazard, the Contractor will prepare a written fall protection plan in accordance with OSHA 29 CFR 1926.502(k). The plan will demonstrate the reasons that conventional fall protection is infeasible or constitutes a greater hazard and will provide alternative safety measures for review and acceptance by the COR.

3.9.6 Excavations

All open excavations made in the earth's surface four (4) foot or greater will be under the supervision of a competent person trained in, and knowledgeable about, soils analysis, the use of protective systems, and the requirements of OSHA 29 CFR 1926, Subpart P and EM 385-1-1, Section 25. The competent person shall be designated in writing by the Contractor and a resume of their training and experience submitted to the COR for acceptance. Excavation hazards and methods for their control shall be specified in the job hazard analysis.

3.9.6.1 Sloping and Benching

The design of sloping and benching shall be selected from and in accordance with written tabulated data, such as charts and tables. At least one copy of the tabulated data will be maintained at the job site.

3.9.6.2 Support Systems

Support systems shall be in accordance with one of the systems outlined in a through c below:

- a. Designs drawn from manufacturer's specifications and in accordance with all specifications, limitations, and recommendations issued or

made by the manufacturer. A copy of the manufacture's specifications, recommendations, and limitations will be in written form and maintained at the job site.

b. Designs selected from and in accordance with tabulated data (such as tables and charts). At least one copy of the design shall be maintained at the job site during excavation.

c. Designed by a registered engineer. At least one copy of the design shall be maintained at the job site during excavation.

3.9.7 Excavations Greater than 20 Feet in Height

Sloping and benching or support systems shall be designed by a registered professional engineer. Designs shall be in writing and at least one copy of the design shall be maintained at the job site during excavation. The contractor will ensure that the registered professional engineer is working within a discipline applicable to the excavation work; i.e. it would be inappropriate for an electrical engineer to approve shoring designed for an excavation.

3.9.8 Confined Space

Entry into and work in a confined space will not be allowed when oxygen readings are less than 19.5% or greater than 23.5% or if the lower explosive limit (LEL) reading is greater than 10%, unless these conditions are adequately addressed in the confined space entry plan. In addition, action levels for toxic atmospheres shall be determined and any other known or potential hazards eliminated prior to entry.

3.10 LANGUAGE

For each group that has employees that do not speak English, the Contractor will provide a bilingual foreman that is fluent in the language of the workers. The contractor will implement the requirements of EM 385-1-1, 01.B through these foremen.

3.11 CONTRACTOR SAFETY MEETINGS AND DOCUMENTATION

Contractor shall conduct and document safety meetings among its personnel as required by EM 385-1-1 and as indicated herein. Monthly meetings shall be held among all supervisors, and weekly meetings shall be conducted by supervisors or foreman for all workers. The agenda of the meetings shall include specific safety items pertinent to work being performed. Documentation shall be submitted to the Government monthly.

3.12 COORDINATION WITH OTHER SPECIFICATION SECTIONS

The requirements of this section are meant to supplement the requirements of other sections. In cases of discrepancies, the most stringent requirements shall apply. Other safety related requirements can typically be found in the following specification sections:

- a. Specification Section 00800, Special Contract Requirements.
- b. Specification Section 00700, Contract Clauses, paragraph entitled "Accident Prevention".
- c. Specification Section 01451, Contractor Quality Control.

d. Other specifications relating to site safety or health requirements or medical monitoring.

3.13 CONTRACTOR PERFORMANCE APPRAISAL

The occurrence of accidents and near misses due to negligence are strong indications that there has been insufficient emphasis on effective implementation and/or commitment to the accident prevention program. Should it become obvious that only lip service is being given to this program, an interim unsatisfactory performance appraisal rating will be issued. If safety continues to be unsatisfactory or marginal, the unsatisfactory rating will become final. The contractor should be aware that this appraisal will be stored in a national computer database which can be accessed by a multitude of agencies or municipalities desiring information on prospective contractors. An unsatisfactory rating in this database may affect the contractor's ability to obtain future Government work.

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SECTION 01451

CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740 (1999c) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction

ASTM E 329 (1998a) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Contractor Quality Control Plan; GA-A.

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause entitled "Inspection of Construction."

Interim Quality Control Plan; GA-A.

The Government will consider an interim plan for the first 90 days of operation. The interim plan shall be submitted at the CQC Coordination Meeting.

SD-18 Records

Daily QC Records and Preparatory and Initial Phase Minutes; GA-A.

The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System

Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause entitled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and off site, and shall be keyed to the proposed construction sequence. For purposes of this section the term "construction" shall include all activities relating to the erection of buildings, roads, infrastructure, flood control structures, or activities relating to dredging and disposal, demolition, hazardous and toxic waste removal, etc., as indicated in the contract documents. Other sections of the contract documents may also require separate, specially qualified individuals in such areas as chemical data acquisition, sampling and analysis, medical monitoring, industrial hygiene, safety officer, etc. The CQC organization will coordinate the activities of these individuals. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

3.2.1 General

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause entitled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 90 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.2 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and off site, including work by subcontractors, fabricator, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall

report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Clear indication that CQC System Manager will have no duties other than Quality Control.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, off site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Contracting Officer.) The Contractor shall incorporate all tests required by the contract (including systems commissioning and operating tests) to derive the above list of testing information which shall be presented in matrix form as part of the CQC Plan. This matrix shall be suitable for use by the Contractor and the Government as a checklist to control testing to be done on the contract. Coordinate any additional test submission or plan requirements for Mechanical and Electrical Systems with appropriate specialized specification section if applicable.

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation. Provide matrix of Preparatory and Initial Inspections including specification reference paragraph, the name of the Definable Feature of Work, and spaces for date performed, results, and names of attendees.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks and has separate control requirements. It could be identified by different trades or disciplines, or it could be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there is frequently more than one definable feature under a particular section. This list will cover all features of work on the project, and will be agreed upon during the coordination meeting.

j. A brief explanation of the duties of the CQC organization with respect to safety. Note that separate Accident Prevention Plan and Hazards Analysis is required for submission and acceptance.

k. Contractor's plan for training all CQC personnel in the CQC System.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Pre-construction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting.

The initial plan submitted must be found acceptable by the Government before the Coordination Meeting can be held. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and off site work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 General

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The number of CQC personnel shall be increased as required during times of high construction workload. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within his organization at the site of the work who shall be responsible for overall management of CQC and have the authority to act in all CQC matters

for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, or shall hold a state Professional Engineer's license, with a minimum of 5 current years construction experience on construction similar to this contract, one year of which as a Quality Control Representative. The CQC Manager may also be a construction person with a minimum of 10 current years in related work, one year of which as a QC Representative. This CQC System Manager shall be on the site at all times during construction and will be employed by the prime Contractor. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC System Manager.

3.4.3 Organizational Expertise

The CQC organization, which includes the CQC System Manager and additional qualified personnel, must as a minimum possess general corporate technical knowledge of all aspects of the project, and must successfully execute the CQC System on all aspects of the project. Individuals possessing experience in specialized areas shall be added to the organization as required during periods when such specialty areas are being executed. Examples of such specialized areas would include HVAC, electrical distribution and substations, roofing, tele-communication systems, fire protection and alarm systems, computer installations, specialized welding, specialized finishes, precast concrete installation, modular housing, specialized geotechnical work, dredging, sand placement and surveying, chemical data acquisition, hazardous material removal and disposal, medical monitoring, etc., depending on the nature of the particular project. The Contractor must demonstrate that such additional qualified personnel have received sufficient training and indoctrination into the CQC system, and that these personnel properly execute the requirements of the CQC System within their areas of expertise.

3.4.4 Organizational Changes

The Contractor shall maintain the CQC Organization at full strength at all times. When it is necessary to make changes to the organization, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS

Submittals shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements and are submitted in accordance with the date on the submittal register. CQC personnel shall also make physical checks of materials and equipment before installation to insure compliance with approved shop drawings.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work after all required plans/documents/materials are approved/accepted, and after copies are at the worksite, and shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met per EM 385-1-1, "Safety and Health Requirements Manual".
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase meeting. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall clearly indicate its intent and plan for communication of the results of the preparatory phase to applicable workers, to include materials, construction methods, workmanship standards, safety considerations and procedures, and preparatory phase meeting minutes.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work (DFW) when the accomplishment of a representative sample of the work is impending. The following shall be accomplished:

- a. A check of the portion of work done to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance.

Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 48 hours in advance of beginning the initial phase meeting. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), the foreman responsible for the definable feature and the work crew(s) for the appropriate DFW. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location (i.e. CQC Report number) of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable feature of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

3.6.5 Definable Feature of Work: Definition and Discussion

A Definable Feature of Work (DFW) is a portion of work consisting of materials, equipment, supplies and procedures which are closely related to each other, have the same control and will be accomplished by the same work crew to completion. A DFW must be sufficiently small so that control of the work (i.e. communication of requirements to workers, inspection of materials and workmanship and correction of deficiencies) will be easily accomplished.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a laboratory which has been assurance inspected by the Corps of Engineers within the last two years. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, will be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an off site or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment and calibration in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, aggregate and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329. The Government will perform an assurance inspection of the laboratory which the contractor proposes to perform tests on soils, concrete, and asphalt.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of \$1500 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 On-Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials will be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, as designated by the Government Representative. Coordination for each specific test, exact delivery location and dates will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished the Contractor shall notify the Government that the facility is ready for the Government's "Pre-final" inspection.

3.8.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is ready to be occupied. A Government "Pre-final Punch List" will be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected and so notify the Government so that a "Final" inspection with the customer can be scheduled.

Any items noted on the "Pre-final" inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph will be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person and the contracting Officer's representative will be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final Inspection. Notice will be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being acceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause entitled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Off-site surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. "N/A" shall be entered into any field for which no entry is intended. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 16 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every seven days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. All documentation is expected to be literate, legible and complete.

3.10 SAMPLE FORMS

3.10.1 CQC Reports

The 2-page form at the end of the section will be used for the basic CQC Report. CQC personnel shall attach continuation sheets as required for any entries which cannot fit on the basic form. Preparatory and Initial Inspections, when performed, shall be indicated on the basic CQC report and minutes for each inspection shall be attached. Minutes will consist of a list of specific requirements for materials, procedures or equipment to be employed and shall also include any understandings reached or items of special importance discussed.

3.10.2 List of Deficiencies

Outstanding deficiencies shall be listed on the form "List of Outstanding Deficiencies" at the end of this section and shall be attached to each CQC report. As deficiencies are corrected, they are to be acknowledged on the basic CQC report and shall be deleted from the list.

3.10.3 CQC Test Report List

Form at the end of this section entitled "CQC Test Report List" shall be used by the Contractor to track testing to be done as the project progresses, and also to summarize the Contractor's Quality Control testing to be reported on the CQC Plan.

3.10.4 Record of Preparatory and Initial Inspection

Form "Record of Preparatory and Initial Inspections" at the end of this section shall be used by the Contractor to track Preparatory and Initial inspections as the project progresses and also to summarize these required inspections as part of the CQC Plan.

3.10.5 Other Forms

Additional reporting forms pertaining to specialized activities may be included herein or elsewhere in the contract, and shall be used for reporting as indicated.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor. Deficiencies cited and verbal instructions given to the Contractor by the Government Representative shall be entered into that day's CQC Report.

-- End of Section --

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(Sample of typical Contractor Quality Control Report)

CONTRACTOR'S NAME
(address)

DAILY CONSTRUCTION QUALITY CONTROL REPORT

Contract No. _____ Date _____

Project Name _____ Report No. _____

Weather _____

Phases of Construction in Progress (Give briefly only phase or phases of work in progress)

Material and/or Equipment Delivered to Site (Including equipment demob)

Inspection Made (Include negative inspections, phase of in-progress construction work inspected and all deficiencies noted during inspections)

Preparatory

Initial

Follow-up

Tests Performed and Results or Tests (including results of tests taken on previous dates)

Verbal Instructions Received (List any instructions given by Contracting Officer personnel on construction deficiencies, retesting required etc., with action to be taken)

Changed Conditions/Delays/Conflicts Encountered

Remarks

SIGNATURE _____
Quality Control Inspector

Contractor's Verification: The above report is complete and correct and all material and equipment used and work performed during this reporting period are in compliance with the contract and specifications except as noted above, and job safety and health requirements are in accordance with the USACE Safety and Health Requirements Manual EM 385-1-1.

Contractor's Approved Authorized Representative

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES

1.1 GENERAL REQUIREMENTS

1.1.1 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.2 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Site Plan; GA-A.

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.3 AVAILABILITY AND USE OF UTILITY SERVICES

1.3.1 Payment for Utility Services

The Government will make all reasonably required utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each

utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

1.3.2 Meters and Temporary Connections

The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.

1.3.3 Advance Deposit

An advance deposit for utilities consisting of an estimated month's usage or a minimum of \$50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed to the Contractor prior to the end of the current fiscal year.

1.3.4 Final Meter Reading

Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.

1.3.5 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.3.6 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.4 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.4.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.4.2 Project and Safety Signs

The requirements for the signs, their content, and location shall be as specified in the SPECIAL CONTRACT REQUIREMENTS. The signs shall be erected within 15 days after receipt of the notice to proceed. The data required by the safety sign shall be corrected daily, with light colored metallic or non-metallic numerals. Upon completion of the project, the signs shall be removed from the site.

1.5 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

1.5.1 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.6 CONTRACTOR'S TEMPORARY FACILITIES

1.6.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the staging areas indicated on the drawings. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.6.2 Staging and Stockpile Areas

The staging and stockpile areas for the Contractor's use are designated on the drawings. The Contractor shall coordinate with the Base Civil Engineering Office at McGuire AFB. The Contractor shall construct temporary 6 foot high chain link fences around trailers and materials. The fences shall include plastic strip inserts, colored green, so that visibility through the fences is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced areas unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fences in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced areas at the end of each work day.

1.6.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.6.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.6.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings,

under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.6.6 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.7 GOVERNMENT FIELD OFFICE

The Contractor shall provide the Government Resident Engineer with a trailer-type mobile office, approximately 200 square feet in floor area, located where directed and providing space heat, electric light and power, and toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer mains. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds. A mail slot in the door or a lockable mail box mounted on the surface of the door shall be provided. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.

1.8 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.9 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.10 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored

material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.11 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced areas, the fences shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS

PART 3 EXECUTION

-- End of Section --

SECTION 02215

GEOTEXTILE

PART 1 GENERAL

1.1 SUMMARY

The work covered by this section consists of furnishing all labor, material and equipment, and performing all operations required for furnishing, hauling, and installing geotextile, complete, as specified herein and shown on the drawing.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM D 123 | (1993) Standard Terminology of Terms Related to Textiles |
| ASTM D 3786 | (1987) Standard Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics - Diaphragm Bursting Strength Tester Method |
| ASTM D 4355 | (1992) Standard Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus) |
| ASTM D 4491 | (1992) Standard Test Methods for Water Permeability of Geotextiles by Permittivity |
| ASTM D 4533 | (1991) Standard Test Method for Trapezoid Tearing Strength of Geotextiles |
| ASTM D 4632 | (1991) Standard Test Method for Grab Breaking Load and Elongation of Geotextiles |
| ASTM D 4751 | (1993; Rev. 1995) Standard Test Method for Determining Apparent Opening Size of a Geotextile |
| ASTM D 4833 | (1988) Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products |

| | |
|-------------|---|
| ASTM D 4873 | (1988) Standard Guide for Identification, Storage, and Handling of Geotextiles |
| ASTM D 4886 | (1988; Rev. 1995) Standard Test Method for Abrasion Resistance of Geotextiles (Sand Paper / Sliding Block Method) |

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-13 Certificates

Geotextile; GA,A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical and manufacturing requirements stated in these specifications.

SD-14 Samples

Geotextile; GA,A.

If requested by the Contracting Officer, the Contractor shall provide to the Government geotextile samples for testing to determine compliance with any or all the requirements in this specification. Samples shall be submitted within 5 days of the request. All samples provided shall be from the same production lot as will be supplied for the contract, and shall be the full manufactured width by at least 10 feet. Samples submitted for testing shall be identified by manufacturers lot designation.

1.4 SHIPMENT, HANDLING, AND STORAGE

1.4.1 Shipment

All geotextile shall be labeled, shipped, stored, and handled in accordance with ASTM D 4873 and as specified herein. Each roll shall be wrapped in an opaque and waterproof layer of plastic during shipment and storage. The plastic wrapping shall be placed around the geotextile roll in the manufacturing facility and shall not be removed until deployment. Each roll shall be labeled with the manufacturers name, geotextile type, lot number, roll number, and roll dimensions (length, width, gross weight). Geotextile or plastic wrapping damaged as a result of delivery, storage, or handling shall be repaired or replaced, as directed at no additional cost to the Government.

1.4.2 Handling

No hooks, tongs, or other sharp instruments shall be used for handling geotextile. Geotextile shall not be dragged along the ground. Any geotextile determined to be damaged as a result of poor handling shall be removed from the site and replaced, at no additional cost to the Government, by additional geotextile meeting the requirements of this specification.

1.4.3 Storage

During all periods of shipment and storage, the geotextile shall be protected from direct sunlight, ultra-violet rays, temperatures in excess 140 degrees F or less if recommended by the manufacturer, mud, dirt, dust and debris. Geotextiles shall be stored in areas where water cannot accumulate, elevated off the ground, and protected from conditions that will affect the properties or performance of the geotextile.

PART 2 PRODUCTS

2.1 GEOTEXTILE

The geotextile shall be a woven or non-woven pervious sheet of plastic yarn as defined by ASTM D 123. Fibers used in the manufacture of the geotextile shall consist of long-chain synthetic polymer composed of at least 85 percent by weight of polyolefins, polyesters, or polyamides. Stabilizers and/or inhibitors shall be added to the base polymer if necessary to make the filaments resistant to deterioration caused by ultraviolet light and heat exposure. Reclaimed or recycled fibers or polymer shall not be added to the formulation. Geotextile shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including the edges. The edges of the geotextile shall be finished to prevent the outer fiber from pulling away from the geotextile. The geotextile shall be manufactured in a width not less than 12 feet and shall meet the physical requirements shown on the following page:

PHYSICAL REQUIREMENTS

| PROPERTY | TEST METHOD | ACCEPTABLE TEST RESULTS |
|--|-------------|--|
| Apparent Opening Size (AOS) | ASTM D 4751 | U.S. Standard Sieve Nos. 70-100 |
| Geotextile Permittivity | ASTM D 4491 | 0.7 sec ⁻¹ minimum. |
| Geotextile Permeability (kG) | ASTM D 4491 | 0.2 cm/sec minimum. |
| Puncture Strength (Unaged Geotextile) | ASTM D 4833 | 80 lbs minimum. |
| Bursting Strength (Unaged Geotextile) | ASTM D 3786 | 500 psi minimum. |
| Trapezoidal Tearing Strength (Unaged Geotextile) | ASTM D 4533 | 40 pounds minimum in any principal direction. |
| Grab Tensile Strength (Unaged Geotextile) | ASTM D 4632 | 200 lbs. min. in any principal direction. |
| Breaking Elongation (Unaged Geotextile) | ASTM D 4632 | 15 percent minimum in any principal direction. |
| Abrasion Resistance (Unaged Geotextile) | ASTM D 4886 | 55 lbs min. residual breaking load in any principal direction. |
| Ultraviolet Degradation (Unaged Geotextile) | ASTM D 4355 | 50% strength retained at 500 hours. |

Unaged geotextile is defined as geotextile in the condition received from the manufacturer or distributor. AOS is defined as the number of the U.S. Standard Sieve having openings closest in size to the geotextile openings. All numerical values represent minimum average roll values, i.e., any roll in a lot shall meet or exceed the minimum in the table.

PART 3 EXECUTION

3.1 INSTALLATION OF GEOTEXTILE

3.1.1 General

The geotextile shall be placed in the manner and at the locations shown on the drawings. At the time of installation, the geotextile will be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage. The prepared surfaces will require inspection and approval by the Contracting Officer prior to the placement of the geotextile.

3.1.2 Installation in Drainage Layer and Underdrain

The geotextile shall be placed as specified in Section 02710 UNDERDRAIN SYSTEM and Section 02714 DRAINAGE LAYER.

3.2 PROTECTION AND REPAIR OF GEOTEXTILE

3.2.1 Protection

The geotextile shall be protected at all times during construction from contamination by surface runoff and any geotextile so contaminated shall be removed and replaced with uncontaminated geotextile. Any damage to the geotextile during its installation or placement of the specified cover materials shall be replaced by the Contractor at his own expense. The work shall be scheduled so that the covering of the geotextile with the specified materials is accomplished within seven days after placement of the geotextile. Failure to comply shall require replacement of the geotextile at the Contractor's expense. In no case shall any type of equipment be allowed on the unprotected geotextile.

3.2.2 Repair

The following procedure shall be performed by the Contractor when repairing damaged sections of the geotextile during or following its installation:

- a. The damaged section of the geotextile shall be cut in a rectangular or square section and removed.
- b. An undamaged piece of geotextile of the same type shall be placed under the original fabric so that its edges over-lap the cut area a minimum of 2 feet in all directions.

Geotextile which cannot be repaired shall be replaced.

3.3 CONTRACTOR QUALITY CONTROL

The Contractor shall include in the reports required by Section 01451 CONTRACTOR QUALITY CONTROL, the date(s) when the geotextile was placed and the date(s) when it was covered with the specified materials.

-- End of Section --

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SECTION 02300

EARTHWORK

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|--|
| ASTM C 136 | (1996a) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM D 422 | (1963; R 1998) Particle-Size Analysis of Soils |
| ASTM D 1140 | (1997) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve |
| ASTM D 1556 | (1990; R 1996el) Density and Unit Weight of Soil in Place by the Sand-Cone Method |
| ASTM D 1557 | (1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.)) |
| ASTM D 2487 | (1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| ASTM D 2922 | (1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 3017 | (1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 4318 | (1998) Liquid Limit, Plastic Limit, and Plasticity Index of Soils |
| ASTM E 11 | (1995) Standard specification for wire cloth sieves for testing purposes. |

NEW JERSEY DEPARTMENT OF TRANSPORTATION (NJDOT)

| | |
|----------------------|---|
| NJDOT Specifications | (1989 Edition) Standard Specifications for Road and Bridge Construction |
|----------------------|---|

1.2 DEFINITIONS

1.2.1 Satisfactory Materials

1.2.1.1 Paved Areas

Satisfactory materials shall be new DENSE GRADED AGGREGATE (DGA) as described in 02722 DENSE-GRADED AGGREGATE BASE COURSE.

1.2.1.2 Other Areas

Satisfactory material in all other areas shall consist of excavated soil and topsoil.

1.2.2 Unsatisfactory Materials

Unsatisfactory materials include trash; recycled asphalt paving materials; refuse; organic materials; and material classified as satisfactory but which contains frozen material. The Contracting Officer shall be notified of any materials contaminated with hazardous or toxic materials.

1.2.3 Unstable Material

Unstable material shall consist of materials too wet to achieve the required compaction of the material.

1.2.4 Cohesionless and Cohesive Materials

Cohesionless materials include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM will be identified as cohesionless only when the fines are nonplastic. Testing required for classifying materials shall be in accordance with ASTM D 4318, ASTM C 136, ASTM D 422, and ASTM D 1140.

1.2.5 Degree of Compaction

Degree of compaction required is expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557 abbreviated as a percent of laboratory maximum density.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Certification of Laboratory; GA-E.

Testing shall be performed by a U.S. Army Corps of Engineers approved commercial testing laboratory or by the Contractor subject to approval. Laboratory facilities require US Army Corps of Engineers certification.

Work Plan; GA-E.

Procedure and location for disposal of unsatisfactory material and unused satisfactory material. Order of operations and equipment list.

Qualifications of Surveyor; GA-A.

Qualifications of surveyor completing layout.

SD-09 Reports

Testing; GA-A.

Within 24 hours, 5 copies of all laboratory and field test reports, including calibration curves and results of calibration tests.

SD-13 Certificates

Subbase; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the aggregate. The affidavit shall attest that the aggregate meets the specific requirements stated in these specifications.

Testing; GA-A.

Qualifications of the commercial testing laboratory or Contractor's testing facilities.

1.4 SUBSURFACE DATA

Subsurface soil boring logs are included on the contract drawings. This data represent the best subsurface information available; however, variations may exist in the subsurface between boring locations.

1.5 CLASSIFICATION OF EXCAVATION

No consideration will be given to the nature of the materials, and all excavation will be designated as unclassified excavation.

1.6 SURVEYS AND LAYOUT

All surveys shall be performed by a Professional Licensed Surveyor currently licensed in New Jersey. Survey control will be established from the existing survey control description data provided as Section 00810 of these specifications.

PART 2 PRODUCTS

2.1 Dense Graded Aggregate (DGA) and Crushed Aggregate Base Course

DGA and crushed aggregate base course shall be as specified in Section 02722 DENSE-GRADED AGGREGATE BASE COURSE.

2.2 Subbase

The subbase shall be a soil aggregate, designation I-5, conforming to Subsection 901.09 of the NJDOT Specifications. The soil aggregate shall have a gradation designation of I-5 as specified in Subsection 901.21, Table 901-2 of the NJDOT Specifications. Excavated material meeting these requirements for NJDOT I-5 material may be used in unpaved areas.

2.3 Topsoil

Topsoil shall be as specified in Section 02921 TOPSOIL AND SEEDING.

PART 3 EXECUTION

3.1 GENERAL EXCAVATION

The Contractor shall perform excavation of every type of material encountered within the limits of the project to the lines, grades, and elevations indicated and as specified. Grading shall be in conformity with the typical sections shown and the tolerances specified in paragraph FINISHING. Surplus excavated material shall be disposed of in approved off-site areas. All materials requiring disposal shall be removed from the site within 24 hours of the time they were excavated or otherwise created. During construction, excavation and fill shall be performed in a manner and sequence that will provide proper drainage at all times. Previously excavated soils and topsoil may be used by the Contractor for fill in unpaved areas.

3.2 STOCKPILES

Stockpiles of satisfactory and wasted materials shall be placed and graded in the stockpile area indicated on the contract drawings. Stockpiles shall be kept in a neat and well drained condition, giving due consideration to drainage at all times. The ground surface at stockpile locations shall be sealed by rubber-tired equipment. Excavated satisfactory and unsatisfactory materials shall be separately stockpiled. Stockpiles of satisfactory materials shall be protected from contamination which may destroy the quality and fitness of the stockpiled material. If the Contractor fails to protect the stockpiles, and any material becomes unsatisfactory, such material shall be removed and replaced with satisfactory material from approved sources at no additional cost to the Government.

3.3 DRAINAGE OF EXCAVATION

Excavation areas shall be provided with adequate drainage. Standing water will not be permitted in the excavations. Surface water runoff shall be

diverted or otherwise prevented from freely flowing into the excavation. Subgrade or base materials detrimentally affected by surface water runoff which was improperly controlled by the Contractor shall be excavated, replaced and recompactd at the Contractor's expense. The Contractor shall ensure that excavation of any area results in minimum detrimental effects on natural environmental conditions.

3.4 REQUIRED ORDER OF WORK

The electrical conduit and underdrain system shall be installed before the preparation/compaction of the subgrade or the existing DGA for placement of the DGA fill.

3.5 PREPARATION OF SUBGRADE AND EXISTING DGA FOR PLACEMENT OF SUBBASE OR DGA FILL

3.5.1 Compaction

Subgrade and existing DGA shall be shaped to line, grade, and cross section, compacted and proof-rolled as specified herein. Unstable or unsatisfactory material shall be removed and replaced with new DGA material as directed. The elevation of the subgrade or existing DGA shall not vary more than 1/2 inch from the grades indicated on the contract drawings. Surfaces on which fill is to be placed shall be stripped of live, dead, or decayed vegetation, rubbish, debris, and other unsatisfactory material. In paved areas, the top 12" of subgrade, or existing DGA, prior to placing new DGA material, shall be compacted to at least 95 percent laboratory maximum density. In shoulder areas, the top 12" of existing DGA or subgrade, prior to placing new subbase or new bituminous concrete pavement directly on it, shall be compacted to at least 100 percent laboratory maximum density. In unpaved areas, the top 12" of existing DGA or subgrade, prior to placing new DGA material or topsoil, shall be compacted to at least 90 percent laboratory maximum density. See Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR TAXIWAY LIGHTING SYSTEM AND UNDERDRAIN SYSTEM for compaction requirements for new lighting system trenches. Compaction shall be accomplished using pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. The prepared surfaces shall be scarified and moistened or aerated as required just prior to placement of the DGA or asphalt materials to assure adequate bond between materials. Satisfactory topsoil and soil excavated from non-paved areas may be stockpiled separately in an approved location for reuse as backfill material in non-paved areas.

3.5.2 Removal of Unstable Material in Paved Areas

Where unstable material is encountered in paved areas, a maximum of 2 feet of such material shall be removed and replaced to the proper grade with new DGA as specified in paragraph DGA FILL FOR PAVED AREAS, herein. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced with new DGA by the Contractor without any additional cost to the Government.

3.5.3 Frozen Material

Fill material shall not be placed on a foundation which contains frozen material, or which has been subjected to freeze-thaw action. This prohibition encompasses all foundation types, including all prepared subgrades and existing base materials. All material that freezes or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Contracting Officer and replaced with new DGA fill material. Alternatively, the material will be thawed, dried, reworked, and recompact to the specified criteria before additional material is placed. The Contracting Officer will determine when placement of fill shall cease due to cold weather. The Contracting Officer may elect to use average daily air temperatures, and/or physical observation of the soils for his determination. Fill material shall not contain frozen clumps of soil, snow, or ice.

3.5.4 Proof Rolling

The Contractor shall proof roll the subgrade as follows: Taxiway L - proof roll the "Base Stone Removal & Replacement Area", shown on the drawings; Taxiway Y - proof roll the full-strength pavement areas, i.e., areas having a DGA base course thickness of 444mm (17.5 inches). Proof rolling of the shoulders is not required. The proof rolling shall be in addition to the compaction specified and shall consist of the application of 30 coverages with a heavy pneumatic-tired roller having four or more tires, each loaded to a minimum of 30,000 pounds and inflated to a minimum of 125 psi. Water content of the subgrade shall be maintained at optimum or at the percentage directed from start of compaction to completion of proof rolling of that layer. Any subgrade materials that produce unsatisfactory results by proof rolling shall be removed and replaced with new DGA, recompact and proof rolled to meet these specifications. The Contractor shall furnish the Contracting Officer with charts or tabulations showing the contact area and the contact pressures for the full range inflation pressures and loadings for the particular tires furnished. When proof rolling, the load of the tire pressure shall be adjusted as nearly as practicable to the maximum supporting value of the subgrade. Material requiring removal due to the negligence of the Contractor and material which was deemed unfit for reuse due to the actions of the Contractor shall not be the sole responsibility of the Contractor.

3.6 PREPARATION OF SUBGRADE IN TAXIWAY H GRADE TRANSITION AREA

Within the 20-foot wide Taxiway H grade transition area, the existing asphalt and aggregate base course shall be removed to a depth of 4 inches below the existing asphalt surface as shown on the drawings. The exposed subgrade in this 20-foot wide transition area shall be compacted to provide a hard, uniform, and smooth surface. Compaction of the exposed subgrade shall be accomplished by a minimum of 10 passes of a vibratory drum roller having an operating weight greater than or equal to 12.5 tons. The compactor's drum must provide complete overlapping coverage to be considered a satisfactory pass. Any soft or otherwise unsatisfactory material identified by the compaction effort shall be removed and replaced with control-compacted, DGA as directed by the Contracting Officer. The

degree of finish shall be within 0.1 foot of the grades and elevations indicated on the contract drawings. Material shall not be placed on surfaces that are muddy, frozen, or contain frost.

3.7 SUBBASE

3.7.1 Placement

Placement shall not begin until subgrade or existing DGA has been compacted, as specified herein, and approved by the COR. The subbase materials shall be placed in horizontal layers not exceeding 8 inches in loose thickness, or 6 inches when hand-operated compactors are used. Subbase shall be brought to the lines and grades indicated on the contract drawings. The elevation of the subbase shall not vary more than 1/2 inch from the grades indicated on the contract drawings. Subbase shall not be placed in wet or frozen areas. After placing, each layer shall be plowed, disked, or otherwise broken up, moistened or aerated as necessary, thoroughly mixed and compacted as specified.

3.7.2 Compaction

The top 12" of subbase shall be compacted to at least 95 percent laboratory maximum density. Compaction shall be accomplished using pneumatic-tired rollers, steel-wheeled rollers, vibratory compactors, or other approved equipment. Approved compacted subbase that is disturbed by the Contractor's operations or adverse weather shall be scarified and compacted as specified herein to the required density prior to further construction thereon. Unstable or unsatisfactory material shall be removed and replaced with new subbase material as directed.

3.8 PROTECTION OF SUBGRADE, EXISTING DGA, AND SUBBASE SURFACES

The compacted subgrade, existing DGA, and subbase surfaces shall not be disturbed by traffic or other operation and shall be protected and maintained by the Contractor in a satisfactory condition until all new DGA or pavement is placed. The storage or stockpiling of materials on the compacted surfaces will not be permitted. No base course or pavement shall be laid until the compacted surfaces have been checked and approved, and in no case shall new DGA or pavement be placed on a muddy, spongy, or frozen surfaces.

3.9 DGA FILL FOR PAVED AREAS

DGA shall adhere strictly to the material and compaction requirements detailed in Section 02722 DENSE-GRADED AGGREGATE BASE COURSE.

3.10 PLACING TOPSOIL

Topsoil shall be placed as specified in Section 02921 TOPSOIL AND SEEDING.

3.11 TESTING

Testing shall be performed by a U.S. Army Corps of Engineers approved commercial testing laboratory or by the Contractor subject to approval.

Laboratory facilities require US Army Corps of Engineers certification. If the Contractor elects to establish testing facilities, no work requiring testing will be permitted until the Contractor's facilities have been inspected and approved by the Contracting Officer. The first inspection will be at the expense of the Government. Cost incurred for any subsequent inspections required because of failure of the first inspection will be charged to the Contractor. Field in-place density shall be determined in accordance with ASTM D 2922. When ASTM D 2922 is used, the calibration curves shall be checked and adjusted using only the sand cone method as described in ASTM D 1556. ASTM D 2922 results in a wet unit weight of soil and when using this method ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017; the calibration checks of both the density and moisture gauges shall be made at the beginning of a job on each different type of material encountered and at intervals as directed by the Contracting Officer. When test results indicate, as determined by the Contracting Officer, that compaction is not as specified, the material shall be removed, replaced and recompactd to meet specification requirements at no additional expense to the Government. Tests on recompactd areas shall be performed to determine conformance with specification requirements. Sieve analysis shall be performed in accordance with ASTM C 136 and ASTM D 422 standards, sieves shall conform to the latest ASTM E 11; and liquid limit and plasticity index determinations shall be performed in accordance with ASTM D 4318. Five (5) copies of these test results shall also be furnished to the Contracting Officer. Inspections and test results shall be certified by a registered professional civil engineer. These certifications shall state that the tests and observations were performed by or under the direct supervision of the engineer and that the results are representative of the materials or conditions being certified by the tests. The following number of tests, if performed at the appropriate time, will be the minimum acceptable for each type operation.

3.11.1 In Place Tests on Existing DGA and Subgrade Materials

In-place density testing shall be performed using ASTM D 2922 on the top 12" and at a frequency of one set of tests for every 250 square yards, or portion thereof, of completed area. Check tests using ASTM D 1556 shall be conducted at a frequency of one test per day per density gauge.

3.11.2 Moisture Contents

In the stockpile or excavation a minimum of two tests per day per type of material or source of material being placed during stable weather conditions shall be performed. During unstable weather, tests shall be made as dictated by local conditions and approved by the Contracting Officer.

3.11.3 Tolerance Tests for Subgrades and Existing DGA Surfaces

Continuous checks on the degree of finish specified in paragraph PREPARATION OF SUBGRADE AND EXISTING BASE COURSE FOR DGA FILL shall be made during construction of the subgrades.

3.12 DISPOSAL OF EXCESS MATERIALS

The disposal of all excess materials shall be at the expense of the Contractor.

-- End of Section --

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SECTION 02316

EXCAVATION, TRENCHING, AND BACKFILLING FOR TAXIWAY LIGHTING SYSTEM AND
UNDERDRAIN SYSTEM

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|--|
| ASTM D 1557 | (1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.)) |
| ASTM D 2487 | (1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System) |

1.2 DEGREE OF COMPACTION

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the excavation, trenching, and backfilling for the taxiway lighting system.

SD-09 Reports

Field Density Tests; GA-A.

Copies of all laboratory and field test reports within 24 hours of the completion of the test.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Satisfactory Material

Satisfactory material for paved areas shall be Dense-Graded Aggregate (DGA) as defined by Section 02722 DENSE-GRADED AGGREGATE BASE COURSE. Previously excavated topsoil and soil, as described in Section 02300 EARTHWORK shall comprise satisfactory material in non-paved areas.

2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials are unsatisfactory. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 1-1/2 inches. The Contracting Officer shall be notified of any contaminated materials.

2.1.3 Cohesionless and Cohesive Materials

Cohesionless materials shall include materials classified in ASTM D 2487 as GW, GP, SW, and SP. Cohesive materials shall include materials classified as GC, SC, ML, CL, MH, and CH. Materials classified as GM and SM shall be identified as cohesionless only when the fines are nonplastic.

2.1.4 Unyielding Material

Unyielding material shall consist of gravelly soils with stones greater than 1-1/2 inches in any dimension.

2.1.5 Unstable Material

Unstable material shall consist of materials too wet to properly support the conduit.

2.2 PLASTIC MARKING TAPE

Plastic marking tape shall be acid and alkali-resistant polyethylene film, 6 inches wide with minimum thickness of 0.004 inch. Tape shall have a minimum strength of 1750 psi lengthwise and 1500 psi crosswise. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 3 feet deep. The tape shall be of a type specifically manufactured for marking and locating underground utilities. The metallic core of the tape shall be encased in a protective jacket or provided with other means to protect it from corrosion. Tape color shall be as specified in TABLE 1 and shall bear a continuous printed inscription describing the specific utility.

TABLE 1. Tape Color

| | |
|------|----------|
| Red: | Electric |
|------|----------|

PART 3 EXECUTION

3.1 REQUIRED ORDER OF WORK

The electrical conduit and underdrain system shall be installed before the preparation/compaction of the subgrade or the existing DGA for placement of the DGA fill.

3.2 EXCAVATION

Excavation shall be performed to the lines and grades indicated. Excavated material not required or not satisfactory for backfill shall be removed from the site on a daily basis. Unsatisfactory material shall not be placed, piled or stockpiled permanently or temporarily on previously placed DGA material. Grading shall be done as may be necessary to prevent surface water from flowing into the excavation, and any water accumulating shall be removed to maintain the stability of the bottom and sides of the excavation. Unauthorized overexcavation shall be backfilled with new DGA at no additional cost to the Government. Soil and topsoil excavated from non-paved areas may be segregated and stockpiled in approved onsite locations for reuse.

3.2.1 Trench Excavation Requirements

Trenches shall be excavated as indicated on the drawings.

3.2.1.1 Bottom Preparation

The bottoms of trenches shall be accurately graded to provide uniform bearing and support for the bottom of concrete encasement of the ducts and for No. 57 stone for the underdrain system.

3.2.1.2 Removal of Unstable Material in Paved Areas

Where unstable material is encountered in the bottom of the trench, in paved areas, such material shall be removed to the depth directed and replaced to the proper grade with new DGA. When removal of unstable material is required due to the Contractor's fault or neglect in performing the work, the resulting material shall be excavated and replaced with new DGA by the Contractor without any additional cost to the Government.

3.3 TRENCH BACKFILLING AND COMPACTION

Trenches shall be backfilled to the grade shown with DGA material in paved areas and satisfactory excavated soil and topsoil in unpaved areas. The top 4-inches, at a minimum, in non-paved areas shall be backfilled with topsoil. Compaction shall be as specified in 02722 DENSE GRADED AGGREGATE BASE COURSE for DGA and as specified in Section 02300 EARTHWORK for unpaved areas. Topsoil shall be placed and seeded as specified in Section 02921 TOPSOIL AND SEEDING.

3.4 TESTING

Testing shall be as specified in 02722 DENSE GRADED AGGREGATE BASE COURSE for DGA.

-- End of Section --

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SECTION 02710

UNDERDRAIN SYSTEM

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY
AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO M 252 (1996) Corrugated Polyethylene Drainage
Tubing

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 270 Mortar for Unit Masonry

ASTM C 478 (1997) Precast Reinforced Concrete Manhole
Sections

ASTM D 412 (1998a) Vulcanized Rubber and
Thermoplastic Rubbers and Thermoplastic
Elastomers - Tension

ASTM D 624 (1998) Tear Strength of Conventional
Vulcanized Rubber and Thermoplastic
Elastomers

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the construction of the underdrain system.

SD-13 Certificates

Aggregate; GA-A. Geotextile; GA-A. Pipe for Underdrains; GA-A.

Certifications from the manufacturers attesting that materials meet specification requirements.

SD-14 Samples

Geotextile; GA-A. Pipe for Underdrains; GA-A.

Samples of geotextile, pipe, and pipe fittings, before starting the work.

1.3 DELIVER, STORAGE, AND HANDLING

1.3.1 Delivery and Storage

Materials delivered to site shall be inspected for damage, unloaded, and stored with minimum handling. Materials shall not be stored directly on the ground. The inside of pipes and fittings shall be kept free of dirt and debris. During shipment and storage, geotextile shall be wrapped in burlap or similar heavy duty protective covering. The storage area shall protect the fabric from mud, soil, dust, and debris. Geotextile materials that are not to be installed immediately shall not be stored in direct sunlight. Plastic pipe shall be installed within 6 months from the date of manufacture unless otherwise approved.

1.3.2 Handling

Materials shall be handled in such a manner as to insure delivery to the trench in sound undamaged condition. Pipe shall be carried and not dragged to the trench.

PART 2 PRODUCTS

2.1 PIPE AND FITTINGS FOR UNDERDRAINS

Pipe and fittings shall be corrugated polyethylene pipe and fittings as specified in AASHTO M 252. Fittings shall be manufacturer's standard type and shall conform to the indicated specification. Pipe shall contain ultraviolet inhibitor to provide protection from exposure to direct sunlight.

2.1.1 Pipe Perforations

Water inlet area shall be a minimum of 0.5 square inch per linear foot. Manufacturer's standard perforated pipe which essentially meets these requirements may be substituted with prior approval of the Contracting Officer.

- a. Circular Perforations in Plastic Pipe: Circular holes shall be cleanly cut not more than 3/8 inch or less than 3/16 inch in diameter and arranged in rows parallel to the longitudinal axis of the pipe. Perforations shall be approximately 3 inches center-to-center along rows. The rows shall be approximately 1-1/2 inches apart and arranged in a staggered pattern so that all

perforations lie at the midpoint between perforations in adjacent rows. The rows shall be spaced over not more than 155 degrees of circumference. The spigot or tongue end of the pipe shall not be perforated for a length equal to the depth of the socket, and perforations shall continue at uniform spacing over the entire length of the pipe.

- b. Slotted Perforations in Plastic Pipe: Circumferential slots shall be cleanly cut so as not to restrict the inflow of water and uniformly spaced along the length and circumference of the tubing. Width of slots shall not exceed 1/8 inch nor be less than 1/32 inch. The length of individual slots shall not exceed 10 percent of the tubing inside nominal circumference. Rows of slots shall be symmetrically spaced so that they are fully contained in the top 2 quadrants of the pipe. Slots shall be centered in the valleys of the corrugations of profile wall pipe.

2.2 GEOTEXTILE

Geotextile shall be as specified in Section 02215 GEOTEXTILE.

2.3 AGGREGATE MATERIAL

The aggregate for the underdrain and 12" wide wick sections shall be AASHTO No. 57 stone as specified for the drainage layer in Section 02714 DRAINAGE LAYER.

2.4 FRAMES AND COVERS

2.4.1 Frames and Covers

Frames and covers shall be cast iron, ductile iron or reinforced concrete. Cast iron frames and covers shall be as indicated or shall be of type suitable for the application, circular, without vent holes. The frames and covers shall have a combined weight of not less than 400 pounds. Reinforced concrete frames and covers shall be as indicated or shall conform to ASTM C 478.

2.4.2 Flush Mounted Cover

Provide cast iron vault box, 12 inch diameter, with watertight frame and coverd. Vault shall support H-20 loading. The frame shall be 6 inches deep, and shall be set in concrete collar a minimum of 8 inches thick, and extending 4 inches beyond the edge of the frame in all directions. Frame and concrete collar shall be set flush with the level of the existing surrounding grade.

2.4.3 Mortar

Mortar shall be cement mortar conforming to ASTM C 270, Type M with Type II cement.

PART 3 EXECUTION

3.1 EXCAVATION AND BEDDING FOR UNDERDRAIN SYSTEMS

Excavation, trenching, backfilling, and compaction shall be in accordance with Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR TAXIWAY LIGHTING AND UNDERDRAIN SYSTEMS.

3.2 INSTALLATION OF GEOTEXTILE AND PIPE FOR UNDERDRAINS

3.2.1 Installation of Geotextile

3.2.1.1 Overlaps on Perforated or Slotted Pipes

One layer of geotextile shall be wrapped around the perforated pipes in such a manner that longitudinal overlaps of fabric are in unperforated or unslotted quadrants of the pipes. The overlap shall be at least 12 inches.

The fabric shall be secured in such a manner that the aggregate material will not infiltrate through any fabric overlaps.

3.2.1.2 Trench Lining and Overlaps

Trenches to be lined with geotextile shall be graded to obtain smooth side and bottom surfaces so that the fabric will not bridge cavities in the soil or be damaged by projecting rock. The fabric shall be laid flat but not stretched on the soil, and it shall be secured with anchor pins. Overlaps shall be at least 12 inches and anchor pins shall be used along the overlaps.

3.2.2 Installation of Pipe for Underdrains

3.2.2.1 Pipelaying

Each pipe shall be carefully inspected before it is laid. Any defective or damaged pipe shall be rejected. No pipe shall be laid when the trench conditions or weather is unsuitable for such work. Water shall be removed from trenches by sump pumping or other approved methods. The pipe shall be laid to the grades and alignment as indicated. The pipe shall be bedded to the established grade line. All pipes in place shall be approved before backfilling.

3.2.2.2 Polyethylene Pipe

Perforated corrugated polyethylene drainage pipe shall be installed in accordance with the manufacturer's specifications and as specified herein. A pipe with physical imperfections shall not be installed. No more than 5 percent stretch in a section will be permitted.

3.3 MANHOLES AND CLEAN-OUT RISERS

3.3.1 Manholes

Manholes shall be installed complete with frames and covers at the locations and with the sizes indicated. Joints shall be completely filled

and shall be smooth and free of surplus mortar or mastic on the inside of the structure. Base for manholes shall be either precast or cast-in-place concrete.

3.3.2 Setting of Frames and Covers

Unless otherwise indicated, tops of frames and covers shall be set flush with finished grade. Frame and cover assemblies shall be sealed to manhole sections using external preformed rubber joint seals that meet the requirements of ASTM D 412 and ASTM D 624, unless otherwise specified.

3.3.3 Clean-out Risers

Clean-out riser pipes with frames and covers shall be installed at the locations indicated. Risers shall be constructed of corrugated polyethylene pipe. Joining of riser pipes to the subdrain system shall be as indicated.

3.4 INSTALLATION OF AGGREGATE MATERIAL AND BACKFILLING FOR UNDERDRAINS

After pipe for underdrains has been laid, inspected, and approved, aggregate material shall be placed around and over the pipe to the depth indicated. The aggregate material shall be placed in layers not to exceed 8 inches thick, and each layer shall be thoroughly compacted by mechanical tampers or rammers to obtain the required density. Compaction of aggregate material shall be in accordance with the applicable provisions specified in Section 02714 DRAINAGE LAYER. The placement and compaction of overlying backfill material shall be in accordance with the applicable provisions specified in Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR TAXIWAY LIGHTING SYSTEM AND UNDERDRAIN SYSTEM.

3.5 INSTALLATION OF GEOTEXTILE AND AGGREGATE MATERIAL FOR 12" WIDE WICK SECTIONS

Trenches to be lined with geotextile shall be graded to obtain smooth side and bottom surfaces so that the fabric will not bridge cavities in the soil or be damaged by projecting rock. One layer of fabric shall be laid flat but not stretched on the soil, and it shall be secured with anchor pins. Overlaps shall be at least 12 inches and anchor pins shall be used along the overlaps. The aggregate material shall be placed in layers not to exceed 8 inches thick, and each layer shall be thoroughly compacted by mechanical tampers or rammers to obtain the required density. Compaction of aggregate material shall be in accordance with the applicable provisions specified in Section 02714 DRAINAGE LAYER.

3.6 TESTS

Strength tests of pipe shall conform to field service test requirements of the ASTM specification covering the product (paragraph PIPE AND FITTINGS FOR UNDERDRAINS).

-- End of Section --

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SECTION 02714

DRAINAGE LAYER

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM C 88 | (1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| ASTM C 117 | (1995) Materials Finer Than No. 200 Sieve in Mineral Aggregates by Washing |
| ASTM C 131 | (1996) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C 136 | (1996a) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM D 75 | (1997) Sampling Aggregates |
| ASTM D 2487 | (1998) Classification of Soils for Engineering Purposes (Unified Soil Classification System) |
| ASTM D 4791 | (1999) Flat or Elongated Particles in Coarse Aggregates |

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Work Plan; GA-E.

The Contractor shall provide a work plan describing the personnel, equipment, and methods to be used to construct the drainage layer.

SD-09 Reports

Approval of Materials; GA-E.

Test results, as required herein, prior to field use.

SD-13 Certificates

Aggregate; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the aggregate. The affidavit shall attest that the aggregate meets the specific requirements stated in these specifications.

1.3 EQUIPMENT

1.3.1 General Requirements

All plant, equipment, and tools used in the performance of the work will be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times.

1.3.2 Compaction Equipment

A dual or single smooth drum roller which provides a maximum compaction effort without crushing the drainage layer aggregate shall be used to compact drainage layer material.

1.4 WEATHER LIMITATION

Drainage layer material shall be placed when the atmospheric temperature is above 35 degrees F. Areas of completed drainage layer or underlying courses that are damaged by freezing, rainfall, or other weather conditions or by contamination from sediments, dust, dirt, or foreign material shall be corrected by the Contractor to meet specified requirements.

1.5 SAMPLING AND TESTING

1.5.1 General Requirements

Drainage layer materials shall be tested to establish compliance with the specified requirements.

1.5.2 Sampling

Aggregate samples shall be taken in accordance with ASTM D 75.

1.5.3 Test Methods

1.5.3.1 Sieve Analyses

Sieve analyses shall be made in accordance with ASTM C 117 and ASTM C 136.

1.5.3.2 Soundness Test

Soundness tests shall be made in accordance with ASTM C 88.

1.5.3.3 Los Angeles Abrasion Test

Los Angeles abrasion tests shall be made in accordance with ASTM C 131.

1.5.3.4 Flat or Elongated Particles Tests

Flat and/or elongated particles tests shall be made in accordance with ASTM D 4791.

1.5.3.5 Fractured Faces Tests

When aggregates are supplied from crushed gravel, approved test methods shall be used to assure the aggregate meets the requirements for fractured faces in paragraph AGGREGATES.

1.5.4 Testing Frequency

Sieve analyses shall be performed at a rate of at least one test for every 1,000 square yards of completed area and not less than one test for each day's production. Soundness tests, Los Angeles abrasion tests, fractured faces tests and flat and/or elongated particles tests shall be performed at the rate of one test for every 10 sieve analysis tests.

PART 2 PRODUCTS

2.1 AGGREGATES

Aggregates shall consist of clean, sound, hard, durable, angular particles of crushed stone, or crushed gravel which meet the specification requirements. The aggregates shall be free of silt and clay as defined by ASTM D 2487, vegetable matter, and other objectionable materials or coatings.

2.1.1 Aggregate Quality

The aggregate shall have a soundness loss not greater than 18 percent weighted averaged at five cycles when tested in magnesium sulfate in accordance with ASTM C 88. The aggregate shall have a percentage of loss on abrasion not to exceed 40 after 500 revolutions as determined by ASTM C 131. The percentage of flat and/or elongated particles shall be determined by ASTM D 4791 with the following modifications. The aggregates shall be separated into two size fractions: Particles greater than 1/2 inch sieve, and, particles passing the 1/2 inch sieve and retained on the No. 4 sieve. The percentage of flat and/or elongated particles in either fraction shall not exceed 20. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3. When the aggregate is supplied from more than one source, aggregate from each source shall meet the requirements set forth

herein. When the aggregate is supplied from crushed gravel it shall be manufactured from gravel particles 90 percent of which by weight are retained on the 1-1/2" sieve. In the portion retained on each sieve specified, the crushed gravel shall contain at least 90 percent by weight of crushed pieces having two or more freshly fractured faces with the area of each face being at least equal to 75 percent of the smallest midsectional area of the face. When two fractures are contiguous, the angle between planes of the fractures must be at least 30 degrees in order to count as two fractured faces.

2.1.2 Gradation Requirements

Drainage layer aggregates shall be well graded, AASHTO No. 57 stone.

2.2 GEOTEXTILE

Geotextile used to wrap all faces of the drainage layer shall be as specified in Section 02215 GEOTEXTILE.

PART 3 EXECUTION

3.1 STOCKPILING AGGREGATES

Aggregates shall be stockpiled at locations designated by the Contracting Officer. Stockpile areas shall be cleared and leveled prior to stockpiling aggregates. All aggregates shall be stockpiled so as to prevent segregation and contamination. Aggregates obtained from different sources shall be stockpiled separately.

3.2 PREPARATION OF FOUNDATION

Prior to constructing the drainage layer, the foundation shall be cleaned of all foreign materials. During construction, the foundation shall contain no frozen material. The foundation shall conform to Section 02300 EARTHWORK. Ruts or soft yielding spots in the foundation having inadequate compaction and deviations of the surface from the requirements set forth herein shall be corrected by loosening and removing soft or unsatisfactory material and by adding approved material, reshaping to line, and grade, and recompact to specified density. The finished foundation shall not be disturbed by traffic or other operations and shall be maintained by the Contractor in a satisfactory condition until the drainage layer is placed.

3.3 TRANSPORTING MATERIAL

Aggregate drainage layer material shall be transported to the site in a manner which prevents segregation and contamination of materials.

3.4 INSTALLATION OF GEOTEXTILE

The drainage layer shall be wrapped with geotextile, as shown on the contract drawings. The layer to be wrapped with geotextile shall be graded to obtain smooth side and bottom surfaces so that the fabric will not bridge cavities in the soil or be damaged by projecting rock. One layer of

fabric shall be laid flat but not stretched on the soil, and it shall be secured with anchor pins. Overlaps shall be at least 12 inches and anchor pins shall be used along the overlaps.

3.5 PLACING

3.5.1 General

Drainage layer material shall be placed on the underlying course in lifts of uniform thickness using equipment meeting the requirements of paragraph EQUIPMENT. When a compacted layer 6 inches or less in thickness is required, the material shall be placed in a single lift. When a compacted layer in excess of 6 inches is required, the material shall be placed in lifts of equal thickness. No lift shall exceed 6 inches or be less than 3 inches when compacted. The lifts shall be so placed that when compacted they will be true to the grades or levels required with the least possible surface disturbance. Where the drainage layer is placed in more than one lift, the previously constructed lift shall be cleaned of loose and foreign material. Such adjustments in placing procedures or equipment shall be made to obtain true grades and minimize segregation and degradation of the drainage layer material.

3.5.2 Hand Spreading

In areas where machine spreading is impractical, drainage layer material shall be spread by hand. The material shall be spread uniformly in a loose layer so as to prevent segregation along with conforming to the required grade and thickness after compaction.

3.6 COMPACTION REQUIREMENTS

Compaction shall be accomplished using rollers meeting the requirements of paragraph EQUIPMENT and operating at a rolling speed of no greater than 1.5 miles per hour. Each lift of drainage material, including shoulders, shall be compacted to provide a hard, uniform, and smooth surface. Satisfactory compaction will be determined by the Contracting Officer based on nonmovement of the drainage material under the compaction equipment. Excessive rolling resulting in crushing of aggregate particles shall be avoided. In all places not accessible to the rollers, the drainage layer material shall be compacted with mechanical hand operated tampers.

3.7 SMOOTHNESS TEST

The final surface of the drainage layer shall not deviate more than 3/8 inch when tested with a 10 foot straightedge applied parallel with and at right angles to the centerline of the area to be paved. Deviations exceeding 3/8 inch shall be corrected in accordance with paragraph DEFICIENCIES.

3.8 THICKNESS CONTROL

The completed thickness of the drainage layer shall be within 1/2 inch of the thickness indicated. Thickness shall be measured at intervals providing at least one measurement for each 653 square yard of drainage

layer. Measurements shall be made in test holes at least 3 inches in diameter. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected in accordance with paragraph DEFICIENCIES. Where the measured thickness is 1/2 inch more than indicated, it will be considered as conforming with the requirements plus 1/2 inch, provided the surface of the drainage layer is within 1/2 inch of established grade. The average job thickness shall be the average of all job measurements as specified above but within 1/4 inch of the thickness shown on the drawings.

3.9 DEFICIENCIES

3.9.1 Grade and Thickness

Deficiencies in grade and thickness shall be corrected such that both grade and thickness tolerances are met. In no case will thin layers of material be added to the top surface of the drainage layer to meet grade or increase thickness. If the elevation of the top of the drainage layer is more than 1/2 inch above the plan grade it shall be trimmed to grade and finished in accordance with paragraph FINISHING. If the elevation of the top surface of the drainage layer is 1/2 inch or more below the required grade, the surface of the drainage layer shall be scarified to a depth of at least 3 inches, new material shall be added, and the layer shall be blended and recompact to bring it to grade. Where the measured thickness of the drainage layer is more than 1/2 inch deficient, such areas shall be corrected by excavating to the required depth and replaced with new material to obtain a compacted lift thickness of at least 3 inches. The depth of required excavation shall be controlled to keep the final surface elevation within grade requirements and to preserve layer thicknesses of materials below the drainage layer.

3.9.2 Smoothness

Deficiencies in smoothness shall be corrected as if they are deficiencies in grade or thickness. All tolerances for grade and thickness shall be maintained while correcting smoothness deficiencies.

-- End of Section --

SECTION 02722

DENSE GRADED AGGREGATE BASE COURSE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|--|
| ASTM C 88 | (1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| ASTM C 117 | (1995) Materials Finer Than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing |
| ASTM C 127 | (1988; R 1993el) Specific Gravity and Absorption of Course Aggregate |
| ASTM C 128 | (1997) Specific Gravity and Absorption of Fine Aggregate |
| ASTM C 131 | (1996) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C 136 | (1996a) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM D 75 | (1997) Sampling Aggregates |
| ASTM D 422 | (1963; R 1998) Particle-Size Analysis of Soils |
| ASTM D 1557 | (1998) Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/cu. ft. (2,700 kN-m/cu. m.)) |
| ASTM D 2922 | (1996el) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth) |
| ASTM D 3017 | (1996) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) |

| | |
|-------------|---|
| ASTM D 4318 | (1998) Liquid Limit, Plastic Limit, and Plasticity Index of Soils |
| ASTM E 11 | (1995) Wire Cloth Sieves for Testing Purposes |

1.2 DEFINITIONS

For the purposes of this specification, the following definitions apply.

1.2.1 Dense Graded Aggregate Base Course

Dense Graded Aggregate base course (DGA) is well graded, crushed, durable aggregate uniformly moistened and mechanically stabilized by compaction.

1.2.2 Degree of Compaction

Degree of compaction shall be expressed as a percentage of the maximum density obtained by the test procedure presented in ASTM D 1557.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Plant, Equipment, and Tools; GA-E.

List of proposed equipment to be used in performance of construction work, including descriptive data.

SD-08 Statements

Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the placement and compaction of the DGA.

SD-09 Reports

Sampling and Testing; GA-E. Field Density Tests; GA-A.

Calibration curves and related test results prior to using the device or equipment being calibrated. Copies of field test results within 24 hours after the tests are performed. Certified copies of test results for approval not less than 30 days before material is required for the work.

SD-13 Certificates

DGA; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the DGA. The affidavit shall attest that the DGA meets the specific requirements stated in these specifications.

SD-14 Samples

DGA; GA-E.

The Contractor shall supply to the Contracting Officer a quantity of DGA approximately equal to a five-gallon bucket at least one week prior to initial placement of DGA material.

SD-18 Records

Waybills and Delivery Tickets; FIO.

Copies of waybills and delivery tickets during the progress of the work. Before the final statement is allowed, the Contractor shall file certified waybills and certified delivery tickets for all aggregates actually used.

1.4 SAMPLING AND TESTING

Sampling and testing shall be the responsibility of the Contractor. Sampling and testing shall be performed by a US Army Corps of Engineers certified testing laboratory approved in accordance with Section 01451 CONTRACTOR QUALITY CONTROL. Work requiring testing will not be permitted until the testing laboratory has been inspected and approved. The materials shall be tested to establish compliance with the specified requirements; testing shall be performed at the specified frequency. The Contracting Officer may specify the time and location of the tests. Copies of test results shall be furnished to the Contracting Officer within 24 hours of completion of the tests.

1.4.1 Sampling

Samples for laboratory testing shall be taken in conformance with ASTM D 75. When deemed necessary, the sampling will be observed by the Contracting Officer.

1.4.2 Tests

The following tests shall be performed in conformance with the applicable standards listed.

1.4.2.1 Sieve Analysis

Sieve analysis shall be made in conformance with ASTM C 117, ASTM C 136 and ASTM D 422. Sieves shall conform to ASTM E 11.

1.4.2.2 Liquid Limit and Plasticity Index

Liquid limit and plasticity index shall be determined in accordance with

ASTM D 4318.

1.4.2.3 Moisture-Density Determinations

The maximum density and optimum moisture content shall be determined in accordance with ASTM D 1557.

1.4.2.4 Field Density Tests

Density shall be field measured in accordance with ASTM D 2922. For the method presented in ASTM D 2922 the calibration curves shall be checked and adjusted if necessary using only the sand cone method as described in paragraph Calibration, of the ASTM publication. Tests performed in accordance with ASTM D 2922 result in a wet unit weight of soil and when using this method, ASTM D 3017 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D 3017. The calibration checks of both the density and moisture gauges shall be made by the prepared containers of material method, as described in paragraph Calibration of ASTM D 2922, on each different type of material being tested at the beginning of a job and at intervals as directed.

1.4.2.5 Wear Test

Wear tests shall be made on DGA course material in conformance with ASTM C 131.

1.4.2.6 Soundness

Soundness tests shall be made on DGA in accordance with ASTM C 88.

1.4.3 Testing Frequency

1.4.3.1 Initial Tests

The following tests in the quantity specified shall be performed on the proposed DGA material prior to commencing construction to demonstrate that the proposed DGA material meets all specified requirements when furnished. If materials from more than one source are going to be utilized, this testing shall be completed for each source.

- a. Sieve Analysis including No. 635 size material. One test shall be conducted for each material type from each source.
- b. Liquid limit and plasticity index moisture-density relationship. One liquid limit and plasticity index moisture-density relationship test shall be conducted for each sieve test conducted.
- c. Moisture-density relationship. One moisture-density relationship test shall be conducted for each DGA material proposed for use on the project.

d. Wear. One wear test shall be conducted for each DGA material proposed for use on the project.

e. Soundness. One soundness test shall be completed for each DGA material proposed for use on the project.

1.4.3.2 In Place Tests

The following tests shall be performed on samples taken from the placed and compacted DGA. Samples shall be taken and tested at the rates indicated.

a. In-place density testing shall be performed on every lift of material placed and at a frequency of one set of tests for every 250 square yards, or portion thereof, of completed area.

b. Sieve Analysis including No. 635 size material shall be performed for every 500 tons, or portion thereof, of material placed.

c. Liquid limit and plasticity index tests shall be performed at the same frequency as the sieve analysis.

1.4.4 Approval of Material

The source of the material shall be selected 30 days prior to the time the material will be required in the work. Tentative approval of material will be based on initial test results. Final approval of the materials will be based on sieve analysis, liquid limit, and plasticity index tests performed on samples taken from the completed and fully compacted DGA.

1.5 WEATHER LIMITATIONS

Construction shall be done when the atmospheric temperature is above 35 degrees F. When the temperature falls below 35 degrees F, the Contractor shall protect all completed areas by approved methods against detrimental effects of freezing. Completed areas damaged by freezing, rainfall, or other weather conditions shall be corrected to meet specified requirements.

1.6 PLANT, EQUIPMENT, AND TOOLS

All plant, equipment, and tools used in the performance of the work will be subject to approval before the work is started and shall be maintained in satisfactory working condition at all times. The equipment shall be adequate and shall have the capability of producing the required compaction, meeting grade controls, thickness control, and smoothness requirements as set forth herein.

PART 2 PRODUCTS

2.1 DENSE GRADED AGGREGATE (DGA)

The DGA shall consist of clean, sound, durable particles of crushed stone, crushed gravel, angular sand, or other approved material. The DGA shall be free of lumps of clay, organic matter, and other objectionable materials or coatings. The portion retained on the No. 4 sieve shall be known as coarse

aggregate; that portion passing the No. 4 sieve shall be known as binder material.

2.1.1 Course Aggregate

Coarse aggregates shall be angular particles of uniform density. When the coarse aggregate is supplied from more than one source, aggregate from each source shall meet the specified requirements and shall be stockpiled separately.

a. Crushed Gravel: Crushed gravel shall be manufactured by crushing gravel particles and shall meet all the requirements specified below.

b. Crushed Stone: Crushed stone retained on each sieve specified shall contain at least 50 percent by weight of crushed pieces having two or more freshly fractured faces with the area of each face being at least equal to 75 percent of the smallest midsectional area of the piece. When two fractures are adjacent, the angle between the planes of the fractures must be at least 30 degrees to count as two fractured faces. Crushed stone shall consist of freshly mined quarry rock, and shall meet all the requirements specified below.

2.1.1.1 Dense Graded Aggregate Base Course

DGA coarse aggregate shall not show more than 40 percent loss when subjected to the Los Angeles abrasion test in accordance with ASTM C 131. DGA coarse aggregate shall not exhibit a loss greater than 40 percent weighted average, at five cycles, when tested for soundness in magnesium sulfate in accordance with ASTM C 88. The amount of flat and elongated particles shall not exceed 20 percent for the fraction retained on the 1/2 inch sieve nor 20 percent for the fraction passing the 1/2 inch sieve. A flat particle is one having a ratio of width to thickness greater than 3; an elongated particle is one having a ratio of length to width greater than 3. In the portion retained on each sieve specified, the crushed aggregate shall contain at least 90 percent by weight of crushed pieces having two or more freshly fractured faces with the area of each face being at least equal to 75 percent of the smallest midsectional area of the piece. When two fractures are contiguous, the angle between planes of the fractures must be at least 30 degrees in order to count as two fractured faces. Crushed gravel shall be manufactured from gravel particles 90 percent of which by weight are retained on the maximum size sieve listed in TABLE 1.

2.1.2 Binder Material

The binder material shall be angular particles of uniform density. When the binder material is supplied from more than one source, aggregate from each source shall meet the specified requirements. Liquid limit and plasticity index requirements shall apply to any component that is blended to meet the required gradation and shall also apply to the completed course. The portion of any component or of the completed course passing the No. 40 sieve shall be nonplastic. Binder material shall consist of angular particles produced by crushing stone or gravel that meets the requirements for wear and soundness specified for DGA coarse aggregate. The binder material shall be produced by crushing only particles larger than No. 4

sieve in size. The binder material shall contain at least 90 percent by weight of particles having two or more freshly fractured faces in the portion passing the No. 4 sieve and retained on the No. 10 sieve, and in the portion passing the No. 10 sieve and retained on the No. 40 sieve.

2.1.3 Gradation Requirements

The specified gradation requirements shall apply to the completed base course. The aggregates shall have a maximum size of 1-1/2 inches and shall be continuously well graded within the limits specified in TABLE 1. Sieves shall conform to ASTM E 11.

TABLE I. GRADATION OF AGGREGATES

Percentage by Weight Passing Square-Mesh Sieve

| Sieve Designation ----- | |
|-------------------------------|-------|
| 1-1/2 inch | 100 |
| 3/4 inch | 55-90 |
| 1/2 inch | 43-78 |
| No. 4 | 25-60 |
| No. 50 | 5-25 |
| No. 200 | 3-8 |

NOTE 1: Particles having diameters less than 0.0008 inch shall not be in excess of 3 percent by weight of the total sample tested.

NOTE 2: The values are based on aggregates of uniform specific gravity. If materials from different sources are used for the coarse and fine aggregates, they shall be tested in accordance with ASTM C 127 and ASTM C 128 to determine their specific gravities. If the specific gravities vary by more than 10 percent, the percentages passing the various sieves shall be corrected as directed by the Contracting Officer.

2.2 CRUSHED AGGREGATE BASE COURSE

Where indicated on contract drawings, crushed aggregate base course shall be DGA, as specified herein.

PART 3 EXECUTION

3.1 REQUIRED ORDER OF WORK

The electrical conduit and underdrain system shall be installed before the preparation/compaction of the subgrade or the existing DGA for placement of the DGA fill.

3.2 GENERAL REQUIREMENTS

When the DGA is constructed in more than one layer, the previously constructed layer shall be cleaned of loose and foreign matter by sweeping with power sweepers or power brooms, except that hand brooms may be used in areas where power cleaning is not practicable. Adequate drainage and control of surface water runoff shall be provided during the entire period of construction to prevent water from collecting or standing on the working area. Line and grade stakes shall be provided as necessary for control. Grade stakes shall be in lines parallel to the centerline of the area under construction and suitably spaced for string lining.

3.3 STOCKPILING MATERIAL

All materials, including approved material available from excavation and grading, shall be stockpiled in the manner and in area designated for stockpiling on the contract drawings. Aggregates shall be stockpiled to prevent segregation. Materials obtained from different sources shall be stockpiled separately.

3.4 PREPARATION OF UNDERLYING MATERIALS

Immediately prior to constructing the DGA, the underlying existing DGA, subbase, or subgrade shall be prepared as specified in Section 02300 EARTHWORK and shall contain no frozen material.

3.5 INSTALLATION

3.5.1 Mixing the Materials

If acquired from different sources, the coarse and fine aggregates shall be mixed in a stationary plant, or in a traveling plant or using the road mix method and placed in such a manner as to obtain uniformity of the aggregate base course material at a uniform optimum water content for compaction. The Contractor shall make adjustments in mixing procedures or in equipment as directed to obtain true grades, to minimize segregation or degradation, to obtain the required water content, and to insure a satisfactory DGA meeting all requirements of this specification.

3.5.2 Placing

The mixed material shall be placed on the prepared subgrade, existing DGA, or subbase in layers of uniform thickness with an approved spreader. No layer shall exceed 8 inches or be less than 5 inches loose thickness. The layers shall be so placed that when compacted they will be true to the grades or levels required with the least possible surface disturbance. Immediately prior to installation of a lift of DGA, the previously constructed layer shall be cleaned of loose and foreign matter by sweeping with power sweepers, power brooms, or hand brooms, as directed. Adjustments in placing procedures or equipment shall be made as may be directed to obtain true grades, to minimize segregation and degradation, to adjust the water content, and to insure an acceptable DGA.

3.5.3 Grade Control

The finished and completed DGA shall conform to the lines, grades, and

cross sections shown. Underlying material(s) shall be excavated and prepared at sufficient depth for the required DGA thickness so that the finished DGA with the subsequent surface course will meet the designated grades.

3.5.4 Edges of Base Course

Approved material shall be placed along the edges of aggregate base course in such quantities as will compact to thickness of the course being constructed, or to the thickness of each layer in a multiple layer course, allowing in each operation at least a 1-foot width of the shoulder to be rolled and compacted simultaneously with rolling and compacting of each layer of base course.

3.5.5 Compaction

Each layer of the DGA shall be compacted as specified with approved compaction equipment. Water content shall be maintained during the compaction procedure to within plus or minus 2 percent of the optimum water content determined from laboratory tests as specified in paragraph SAMPLING AND TESTING. Rolling shall begin at the outside edge of the surface and proceed to the center, overlapping on successive trips at least one-half the width of the roller. Alternate trips of the roller shall be slightly different lengths. Speed of the roller shall be such that displacement of the aggregate does not occur and shall in no case exceed 1.5 miles per hour. In all places not accessible to the rollers, the mixture shall be compacted with hand-operated power tampers. Compaction shall continue until each layer has a degree of compaction that is at least 100 percent of laboratory maximum density through the full depth of the layer. The Contractor shall make such adjustments in compacting or finishing procedures as may be directed to obtain true grades, to minimize segregation and degradation, to reduce or increase water content, and to ensure a satisfactory DGA. Any materials that are found to be unsatisfactory shall be removed and replaced with satisfactory material or reworked, as directed, to meet the requirements of this specification.

3.5.6 Thickness

Compacted thickness of the aggregate course shall be as indicated. The total compacted thickness of the DGA course shall be within 1/2 inch of the thickness indicated. Where the measured thickness is more than 1/2 inch deficient, such areas shall be corrected by scarifying, adding new material of proper gradation, reblading, and recompacting as directed. Where the measured thickness is more than 1/2 inch thicker than indicated, the course shall be considered as conforming to the specified thickness requirements. Average job thickness shall be the average of all thickness measurements taken for the job, but shall be within 1/4 inch of the thickness indicated.

The total thickness of the DGA course shall be measured at intervals in such a manner as to ensure one measurement for each 500 square yards of base course. Measurements shall be made in 3 inch diameter test holes penetrating the base course.

3.5.7 Final Proof Rolling

The Contractor shall proof roll the final lift of the new DGA beneath paved areas as follows: Taxiway L - proof roll the "Base Stone Removal and Replacement Area", shown on the drawings; Taxiway Y - proof roll the full-strength pavement areas, i.e., areas having a DGA base course thickness of 444mm (17.5 inches). Proof rolling of the shoulders is not required. The proof rolling shall be in addition to the compaction specified and shall consist of the application of 30 coverages with a heavy pneumatic-tired roller having four or more tires, each loaded to a minimum of 30,000 pounds and inflated to a minimum of 125 psi. Water content of the DGA shall be maintained at optimum or at the percentage directed from start of compaction to completion of proof rolling of that layer. Any DGA materials that produce unsatisfactory results by proof rolling shall be removed and replaced with new DGA, recompact and proof rolled to meet these specifications. The Contractor shall furnish the Contracting Officer with charts or tabulations showing the contact area and the contact pressures for the full range inflation pressures and loadings for the particular tires furnished. When proof rolling, the load of the tire pressure shall be adjusted as nearly as practicable to the maximum supporting value of the subgrade. Material requiring removal due to the negligence of the Contractor and material which was deemed unfit for reuse due to the actions of the Contractor shall not be the sole responsibility of the Contractor.

3.5.8 Finishing

The surface of the top layer of DGA shall be finished after final compaction and proof rolling by cutting any overbuild to grade and rolling with a steel-wheeled roller. Thin layers of material shall not be added to the top layer of base course to meet grade. If the elevation of the top layer of DGA is 1/2 inch or more below grade, then the top layer should be scarified to a depth of at least 3 inches and new material shall be blended in, compacted and proof rolled to bring to grade. Adjustments to rolling and finishing procedures shall be made as directed to minimize segregation and degradation, obtain grades, maintain moisture content, and insure an acceptable base course. Should the surface become rough, corrugated, uneven in texture, or traffic marked prior to completion, the unsatisfactory portion shall be scarified, reworked and recompact or it shall be replaced as directed.

3.5.9 Smoothness

The surface of the top layer shall show no deviations in excess of 3/8 inch when tested with a 12 foot straightedge. Measurements shall be taken in successive positions parallel to the centerline of the area to be paved. Measurements shall also be taken perpendicular to the centerline at 50 foot intervals. Deviations exceeding this amount shall be corrected by removing material and replacing with new material, or by reworking existing material and compacting it to meet these specifications.

3.6 TRAFFIC

Traffic shall not be allowed on the completed DGA course.

3.7 MAINTENANCE

The DGA shall be maintained in a satisfactory condition until the full pavement section is completed and accepted. Maintenance shall include immediate repairs to any defects and shall be repeated as often as necessary to keep the area intact. Any DGA that is not paved over prior to the onset of winter, shall be retested to verify that it still complies with the requirements of this specification. Any area of DGA that is damaged shall be reworked or replaced as necessary to comply with this specification.

3.8 DISPOSAL OF UNSATISFACTORY MATERIALS

Any unsatisfactory materials that must be removed shall be disposed of as directed in 02300 EARTHWORK. No additional payments will be made for materials that must be replaced.

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SECTION 02748

BITUMINOUS TACK AND PRIME COATS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

AASHTO T 40 (1978; Rev 1996) Sampling Bituminous
Materials

AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM)

ASTM D 140 (2000) Sampling Bituminous Materials

ASTM D 2027 (1976; R 1997) Cutback Asphalt
(Medium-Curing Type)

ASTM D 2397 (1998) Cationic Emulsified Asphalt

ASTM D 2995 (1999) Determining Application Rate of
Bituminous Distributors

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-09 Reports

Tests; FIO.

Copies of all test results for bituminous materials, within 24 hours of completion of tests. Certified copies of the manufacturer's test reports indicating compliance with applicable specified requirements, not less than 30 days before the material is required in the work.

SD-13 Certificates

Tack Coat; GA-A; Prime Coat; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the tack and prime coats. The affidavit shall attest that the tack and prime coats meet the specific requirements stated in these specifications.

SD-18 Records

Waybills and Delivery Tickets; FIO.

Waybills and delivery tickets, during progress of the work.

1.3 PLANT, EQUIPMENT, MACHINES AND TOOLS

1.3.1 General Requirements

Plant, equipment, machines and tools used in the work shall be subject to approval and shall be maintained in a satisfactory working condition at all times.

1.3.2 Bituminous Distributor

The distributor shall have pneumatic tires of such size and number to prevent rutting, shoving or otherwise damaging the base surface or other layers in the pavement structure. The distributor shall be designed and equipped to spray the bituminous material in a uniform coverage at the specified temperature, at readily determined and controlled rates with an allowable variation from the specified rate of not more than plus or minus 5 percent, and at variable widths. Distributor equipment shall include a separate power unit for the bitumen pump, full-circulation spray bars, tachometer, pressure gauges, volume-measuring devices, adequate heaters for heating of materials to the proper application temperature, a thermometer for reading the temperature of tank contents, and a hand hose attachment suitable for applying bituminous material manually to areas inaccessible to the distributor. The distributor shall be equipped to circulate and agitate the bituminous material during the heating process.

1.3.3 Power Brooms and Power Blowers

Power brooms and power blowers shall be suitable for cleaning the surfaces to which the bituminous coat is to be applied.

1.4 WEATHER LIMITATIONS

Bituminous coat shall be applied only when the surface to receive the bituminous coat is dry. Bituminous coat shall be applied only when the atmospheric temperature in the shade is 50 degrees Fahrenheit or above and when the temperature has not been below 35 degrees Fahrenheit for the 12 hours prior to application.

PART 2 PRODUCTS

2.1 TACK COAT

Emulsified asphalt shall conform to ASTM D 2397, Grade CSS-1h.

2.2 PRIME COAT

Emulsified asphalt shall conform to ASTM D 2027, Grade MC-70.

PART 3 EXECUTION

3.1 PREPARATION OF SURFACE

Immediately before applying the bituminous coat, all loose material, dirt, clay, or other objectionable material shall be removed from the surface to be treated. The surface shall be dry and clean at the time of treatment.

3.2 APPLICATION RATE

The exact quantities within the range specified, which may be varied to suit field conditions, will be determined by the Contracting Officer.

3.2.1 Tack Coat

Bituminous material for the tack coat shall be applied in quantities of not less than 0.05 gallon nor more than 0.15 gallon per square yard of pavement surface.

3.2.2 Prime Coat

Bituminous material for the prime coat shall be applied in quantities of not less than 0.15 gallon nor more than 0.40 gallon per square yard of pavement surface.

3.3 APPLICATION TEMPERATURE

3.3.1 Viscosity Relationship

Asphalt application temperature shall provide an application viscosity between 10 and 60 seconds, Saybolt Furol, or between 20 and 120 centistokes, kinematic. The temperature viscosity relation shall be furnished to the Contracting Officer.

3.3.2 Temperature Ranges

The viscosity requirements shall determine the application temperature to be used. The following is a normal range of application temperatures:

| Emulsions | |
|-----------|-------------------|
| ----- | |
| RS-1 | 70-140 degrees F |
| SS-1 | 70-160 degrees F |
| CRS-1 | 125-185 degrees F |
| CSS-1 | 70-160 degrees F |

*These temperature ranges exceed the flash point of the material and care should be taken in their heating.

3.4 APPLICATION

Following preparation and subsequent inspection of the surface, the bituminous coat shall be applied at the specified rate with uniform distribution over the surface to be treated. All areas and spots missed by the distributor shall be properly treated with the hand spray. Until the succeeding layer of pavement is placed, the surface shall be maintained by protecting the surface against damage and by repairing deficient areas at no additional cost to the Government. If required, clean dry sand shall be spread to effectively blot up any excess bituminous material. No smoking, fires, or flames other than those from the heaters that are a part of the equipment shall be permitted within 25 feet of heating, distributing, and transferring operations of bituminous material other than bituminous

emulsions. To obtain uniform application of the prime coat on the surface treated at the junction of previous and subsequent applications, building paper shall be spread on the surface for a sufficient distance back from the ends of each application to start and stop the prime coat on the paper. Immediately after application, the building paper shall be removed and destroyed.

3.5 CURING PERIOD

Following application of the bituminous material and prior to application of the succeeding layer of pavement, the bituminous coat shall be allowed to cure and to obtain evaporation of any volatiles or moisture. Prime coat shall be allowed to cure without being disturbed for a period of at least 48 hours or longer, as may be necessary to attain penetration into the treated course.

3.6 FIELD QUALITY CONTROL

Samples of the bituminous material shall be tested for compliance with the applicable specified requirements. A sample shall be obtained and tested by the Contractor for every 500 gallons, or portion thereof, of bituminous material used.

3.7 SAMPLING AND TESTING

Sampling and testing shall be performed by an approved commercial testing laboratory or by facilities furnished by the Contractor. No work requiring testing will be permitted until the facilities have been inspected and approved by the U.S. Army Corps of Engineers.

3.7.1 Sampling

The samples of bituminous material, unless otherwise specified, shall be in accordance with ASTM D 140 or AASHTO T 40. Sources from which bituminous materials are to be obtained shall be selected and notification furnished the Contracting Officer within 15 days after the award of the contract.

3.7.2 Calibration Test

The Contractor shall furnish all equipment, materials, and labor necessary to calibrate the bituminous distributor. Calibration shall be made with the approved job material and prior to applying the bituminous coat material to the prepared surface. Calibration of the bituminous distributor shall be in accordance with ASTM D 2995.

3.7.3 Trial Applications

Before providing the complete bituminous coat, three lengths of at least 100 feet for the full width of the distributor bar shall be applied to evaluate the amount of bituminous material that can be satisfactorily applied.

3.7.3.1 Tack Coat Trial Application Rate

Unless otherwise authorized, the trial application rate of bituminous tack coat materials shall be applied in the amount of 0.05 gallons per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

3.7.3.2 Prime Coat Trial Application Rate

Unless otherwise authorized, the trial application rate of bituminous materials shall be applied in the amount of 0.25 gallon per square yard. Other trial applications shall be made using various amounts of material as may be deemed necessary.

3.7.4 Sampling and Testing During Construction

Quality control sampling and testing shall be performed as required in paragraph FIELD QUALITY CONTROL.

-- End of Section --

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SECTION 02749

HOT-MIX ASPHALT (HMA) FOR AIRFIELDS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
(AASHTO)

| | |
|-------------|--|
| AASHTO MP 1 | (1998) Performance Graded Asphalt Binder |
| AASHTO TP53 | (1998; Interim 1999) Determining Asphalt Content of Hot Mix Asphalt by the Ignition Method |

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|---|
| ASTM C 88 | (1999a) Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate |
| ASTM C 117 | (1995) Materials Finer than 75 micrometer (No. 200) Sieve in Mineral Aggregates by Washing |
| ASTM C 131 | (1996) Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine |
| ASTM C 136 | (1996a) Sieve Analysis of Fine and Coarse Aggregates |
| ASTM C 566 | (1999a) Total Evaporable Moisture Content of Aggregate by Drying |
| ASTM C 1252 | (1998) Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading) |
| ASTM D 140 | (2000) Sampling Bituminous Materials |
| ASTM D 242 | (1995) Mineral Filler for Bituminous Paving Mixtures |
| ASTM D 995 | (1995b) Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures |
| ASTM D 1461 | (1985; R 1994) Moisture or Volatile |

Distillates in Bituminous Paving Mixtures

| | |
|---------------------|---|
| ASTM D 1559 | (1989) Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus |
| ASTM D 2041 | (1995) Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures |
| ASTM D 2172 | (1995) Quantitative Extraction of Bitumen from Bituminous Paving Mixtures |
| ASTM D 2419 | (1995) Sand Equivalent Value of Soils and Fine Aggregate |
| ASTM D 2489 | (1984; R 1994el) Degree of Particle Coating of Bituminous-Aggregate Mixtures |
| ASTM D 2726 | (1996el) Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixture |
| ASTM D 2950 | (1997) Density of Bituminous Concrete in Place by Nuclear Method |
| ASTM D 3203 | (1994) Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures |
| ASTM D 3665 | (1999) Random Sampling of Construction Materials |
| ASTM D 3666 | (1998) Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials |
| ASTM D 4125 | (1994el) Asphalt Content of Bituminous Mixtures by the Nuclear Method |
| ASTM D 4791 | (1999) Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate |
| ASTM D 4867/D 4867M | (1996) Effect of Moisture on Asphalt Concrete Paving Mixtures |
| ASTM D 5444 | (1998) Mechanical Size Analysis of Extracted Aggregate |
| ASTM D 6307 | (1999) Asphalt Content of Hot Mix Asphalt by Ignition Method |

ASPHALT INSTITUTE (AI)

AI MS-2 (1997) Mix Design Methods for Asphalt
Concrete and Other Hot-Mix Types

CORPS OF ENGINEERS (COE)

COE CRD-C 171 (1995) Test Method for Determining
Percentage of Crushed Particles in
Aggregate

1.2 DESCRIPTION OF WORK

The work shall consist of pavement courses composed of mineral aggregate and asphalt material heated and mixed in a central mixing plant and placed on a prepared course. HMA designed and constructed in accordance with this section shall conform to the lines, grades, thicknesses, and typical cross sections shown on the drawings. Each course shall be constructed to the depth, section, or elevation required by the drawings and shall be rolled, finished, and approved before the placement of the next course.

1.3 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Asphalt Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the placement of the asphalt.

Concrete Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the repairs of the exposed, underlying concrete surface of Taxiway L.

SD-09 Reports

Aggregates; GA-E. QC Monitoring; GA-E.

Aggregate and QC test results.

SD-13 Certificates

Aggregate; GA-A; Asphalt Cement Binder; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the aggregate and cement binder. The affidavit shall attest that the aggregate

and cement binder meet the specific requirements stated in these specifications.

Testing Laboratory; GA-A.

Certification of compliance.

SD-14 Samples

Asphalt Cement Binder; FIO.

5 gallon sample for mix design verification.

Aggregates; FIO.

Sufficient materials to produce 200 lb of blended mixture for mix design verification.

SD-18 Records

Mix Design; GA-E.

Proposed JMF.

Contractor Quality Control; GA-E.

Quality control plan.

1.4 ASPHALT MIXING PLANT

Plants used for the preparation of hot-mix asphalt shall conform to the requirements of ASTM D 995 with the following changes:

a. Truck Scales. The asphalt mixture shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed at least annually by an approved calibration laboratory.

b. Testing Facilities. The Contractor shall provide laboratory facilities at the plant for the use of the Government's acceptance testing and the Contractor's quality control testing.

c. Inspection of Plant. The Contracting Officer shall have access at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant; verifying weights, proportions, and material properties; checking the temperatures maintained in the preparation of the mixtures and for taking samples. The Contractor shall provide assistance as requested, for the Government to procure any desired samples.

d. Storage Bins and Surge Bins. Use of non-insulated bins or storage bins for temporary storage of hot-mix asphalt will be permitted as follows:

(1) The asphalt mixture may be stored in non-insulated bins for a

period of time not exceeding 3 hours.

(2) The asphalt mixture may be stored in insulated storage bins for a period of time not exceeding 8 hours. The mix drawn from bins shall meet the same requirements as mix loaded directly into trucks.

1.5 HAULING EQUIPMENT

Trucks used for hauling hot-mix asphalt shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other approved material. Petroleum based products shall not be used as a release agent. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers (tarps) shall be securely fastened.

1.6 ASPHALT PAVERS

Asphalt pavers shall be self-propelled, with an activated screed, heated as necessary, and shall be capable of spreading and finishing courses of hot-mix asphalt which will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

1.6.1 Receiving Hopper

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

1.6.2 Automatic Grade Controls

If an automatic grade control device is used, the paver shall be equipped with a control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices which will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent. A transverse slope controller shall not be used to control grade.

The controls shall be capable of working in conjunction with any of the following attachments:

- a. Ski-type device of not less than 30 feet in length.
- b. Taut stringline (wire) set to grade.

- c. Short ski or shoe for joint matching.
- d. Laser control.

1.7 ROLLERS

Rollers shall be in good condition and shall be operated at slow speeds to avoid displacement of the asphalt mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition. Equipment which causes excessive crushing of the aggregate shall not be used.

1.8 WEATHER LIMITATIONS

The hot-mix asphalt shall not be placed upon a wet surface or when the surface temperature of the underlying course is: less than 40 degrees if the mat thickness is 3" or greater; or, less than 45 degrees if the mat thickness is less than 3".

PART 2 PRODUCTS

2.1 WEARING AND INTERMEDIATE COURSES

Where indicated on the contract drawings, wearing and intermediate courses shall be the same mix design as specified herein.

2.2 AGGREGATES

Aggregates shall consist of crushed stone, crushed gravel, screenings, natural sand and mineral filler, as required. The portion of material retained on the No. 4 sieve is coarse aggregate. The portion of material passing the No. 4 sieve and retained on the No. 200 sieve is fine aggregate. The portion passing the No. 200 sieve is defined as mineral filler. All aggregate test results and samples shall be submitted to the Contracting Officer at least 14 days prior to start of construction.

2.2.1 Coarse Aggregate

Coarse aggregate shall consist of sound, tough, durable particles, free from films of material that would prevent thorough coating and bonding with the asphalt material and free from organic matter and other deleterious substances. The coarse aggregate particles shall meet the following requirements:

- a. The percentage of loss shall not be greater than 40 percent after 500 revolutions when tested in accordance with ASTM C 131.
- b. The percentage of loss shall not be greater than 12 percent after five cycles when tested in accordance with ASTM C 88 using magnesium sulfate.
- c. At least 75 percent by weight of coarse aggregate shall have at least two or more fractured faces with the area of each face equal to at

least 75 percent of the smallest midsectional area of the piece when tested in accordance with COE CRD-C 171. When two fractures are contiguous, the angle between planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be produced by crushing.

d. The particle shape shall be essentially cubical and the aggregate shall not contain more than 20 percent, by weight, of flat and elongated particles (3:1 ratio of maximum to minimum) when tested in accordance with ASTM D 4791.

2.2.2 Fine Aggregate

Fine aggregate shall consist of clean, sound, tough, durable particles produced by crushing stone or gravel. The material used to produce fine aggregate shall meet the requirements described for course aggregate. The aggregate particles shall be free from coatings of clay, silt, or any objectionable material and shall contain no clay balls. The fine aggregate particles shall meet the following requirements:

a. The quantity of natural sand (noncrushed material) added to the aggregate blend shall not exceed 15 percent by weight of total aggregate. Natural sand shall be clean and free from clay or organic matter. Percentage loss shall not exceed 18 after five cycles of the soundness test performed in accordance with ASTM C 88, using magnesium sulfate.

b. The individual fine aggregate sources shall have a sand equivalent value greater than 45 when tested in accordance with ASTM D 2419.

c. The fine aggregate portion of the blended aggregate shall have an uncompacted void content greater than 45.0 percent when tested in accordance with ASTM C 1252 Method A.

d. Fine aggregate produced by crushing gravel shall have at least 90 percent by weight of crushed particles which are retained on the No. 30 sieve having two or more fractured faces in the portion.

2.2.3 Mineral Filler

Mineral filler shall be nonplastic material meeting the requirements of ASTM D 242. Mineral filler shall meet the following gradation requirements.

Table 1
Mineral Filler Gradation

| Grain Size in mm | Percent Finer |
|------------------|---------------|
| 0.05 | 70-100 |
| 0.02 | 35-65 |
| 0.005 | 10-22 |

2.2.4 Aggregate Gradation

The combined aggregate gradation shall conform to gradations specified in Table 2, when tested in accordance with ASTM C 136 and ASTM C 117, and shall not vary from the low limit on one sieve to the high limit on the

adjacent sieve or vice versa, but grade uniformly from coarse to fine.

Table 2. Aggregate Gradation

| Sieve Size, inch | Percent Passing by Mass |
|------------------|----------------------------|
| 3/4 | 100 |
| 1/2 | 76-96 |
| 3/8 | 69-89 |
| No. 4 | 53-73 |
| No. 8 | 38-60 |
| No. 16 | 26-48 |
| No. 30 | 18-38 |
| No. 50 | 11-27 |
| No. 100 | 6-18 |
| No. 200 | 3-6 |

2.3 ASPHALT CEMENT BINDER

Asphalt cement binder shall conform to AASHTO MP 1 Performance Grade (PG) 64-22. Test data indicating grade certification shall be provided by the supplier at the time of delivery of each load to the mix plant. Copies of these certifications shall be submitted to the Contracting Officer. The supplier is defined as the last source of any modification to the binder. The Contracting Officer may sample and test the binder at the mix plant at any time before or during mix production. Samples for this verification testing shall be obtained by the Contractor in accordance with ASTM D 140 and in the presence of the Contracting Officer. These samples shall be furnished to the Contracting Officer for the verification testing, which shall be at no cost to the Contractor. Samples of the asphalt cement specified shall be submitted for approval not less than 14 days before start of the test section.

2.4 MIX DESIGN

The Contractor shall develop the mix design. The asphalt mix shall be composed of a mixture of well-graded aggregate, mineral filler if required, and asphalt material. The aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF). No hot-mix asphalt for payment shall be produced until a JMF has been approved. No payment will be made for mixtures produced prior to the approval of the JMF by the Contracting Officer. The hot-mix asphalt shall be designed using procedures contained in AI MS-2 and the criteria shown in Table 3. If the Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867/D 4867M is less than 75, the aggregates shall be rejected or the asphalt mixture treated with an approved anti-stripping agent. The amount of anti-stripping agent added shall be sufficient to produce a TSR of not less than 75. If an antistrip agent or antifoaming is required, it shall be provided by the Contractor at no additional cost, and is subject to approval for use by the Contracting Officer. If requested, the Contractor will provide sufficient materials to produce 200 pound of blended mixture to the Contracting Officer for verification of mix design at least 14 days prior to construction of test section.

2.4.1 JMF Requirements

The job mix formula shall be submitted in writing by the Contractor for approval at least 14 days prior to the start of the test section and shall include as a minimum:

- a. Percent passing each sieve size.
- b. Percent of asphalt cement.
- c. Percent of each aggregate and mineral filler to be used.
- d. Asphalt viscosity grade, penetration grade, or performance grade.
- e. Number of blows of hammer per side of molded specimen.
- f. Laboratory mixing temperature.
- g. Lab compaction temperature.
- h. Temperature-viscosity relationship of the asphalt cement.
- i. Plot of the combined gradation on the 0.45 power gradation chart, stating the nominal maximum size.
- j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content as shown in AI MS-2.
- k. Specific gravity and absorption of each aggregate.
- l. Percent natural sand.
- m. Percent particles with 2 or more fractured faces (in coarse aggregate).
- n. Fine aggregate angularity.
- o. Percent flat or elongated particles (in coarse aggregate).
- p. Tensile Strength Ratio.
- q. Antistrip agent (if required) and amount.
- r. List of all modifiers and amount.
- s. RAP shall not be allowed.

Table 3. Nonabsorptive Aggregate Marshall Design Criteria

| Test Property | 75 Blow Mix |
|-------------------|-------------|
| Stability, pounds | |

Table 3. Nonabsorptive Aggregate Marshall Design Criteria

| | |
|--|----------------------|
| Test Property minimum | 75 Blow Mix *1800 |
| Flow, 0.01 inch | 8-16 |
| Air voids, percent | 3-5 |
| Percent Voids in mineral aggregate (minimum) | 14 |
| TSR, minimum percent | 75 |

* This is a minimum requirement. The average during construction shall be significantly higher than this number to ensure compliance with the specifications.

** Calculate VMA in accordance with AI MS-2, based on ASTM D 2726 bulk specific gravity for the aggregate.

Table 4. Job Mix Allowable Tolerances

| | |
|--|--------------|
| Aggregate passing No. 4 or larger sieves | 4 percent |
| Aggregate passing Nos. 8, 16, 30 & 50 sieves | 3 percent |
| Aggregate passing Nos. 100 and 200 sieves | 1 percent |
| Bitumen | 0.20 percent |
| Temperature mixing | 25 degrees F |

2.4.2 Adjustments to JMF

The JMF for each mixture shall be in effect until a new formula is approved in writing by the Contracting Officer. Should a change in sources of any materials be made, a new mix design shall be performed and a new JMF approved before the new material is used. The Contractor will be allowed to adjust the JMF within the limits specified below to optimize mix volumetric properties. Adjustments to the JMF shall be limited to plus or minus 3 percent on the 1/2 inch, No. 4, and No. 8 sieves; plus or minus 1.0 percent on the No. 200 sieve; and plus or minus 0.40 percent binder content. If adjustments are needed that exceed these limits, a new mix design shall be developed. Tolerances given above may permit the aggregate grading to be outside the limits shown in Table 2; this is acceptable.

2.5 RECYCLED HOT MIX ASPHALT

The use of recycled HMA shall not be allowed.

2.6 CONCRETE

The concrete shall be as specified in Section 03300 CONCRETE.

PART 3 EXECUTION

3.1 PREPARATION OF ASPHALT BINDER MATERIAL

The asphalt cement material shall be heated avoiding local overheating and providing a continuous supply of the asphalt material to the mixer at a uniform temperature. The temperature shall be no more than 325 degrees F when added to the aggregates.

3.2 PREPARATION OF MINERAL AGGREGATE

The aggregate for the mixture shall be heated and dried prior to mixing. No damage shall occur to the aggregates due to the maximum temperature and rate of heating used. The temperature of the aggregate and mineral filler shall not exceed 350 degrees F when the asphalt cement is added. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

3.3 PREPARATION OF HOT-MIX ASPHALT MIXTURE

The aggregates and the asphalt cement shall be weighed or metered and introduced into the mixer in the amount specified by the JMF. The combined materials shall be mixed until the aggregate obtains a uniform coating of asphalt binder and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but no less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D 2489, for each individual plant and for each type of aggregate used.

The wet mixing time will be set to at least achieve 95 percent of coated particles. For continuous mix plants, the wet mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all hot-mix asphalt upon discharge from the plant shall not exceed 0.5 percent by total weight of mixture as measured by ASTM D 1461.

3.4 PREPARATION OF THE UNDERLYING SURFACE

3.4.1 General

Immediately before placing the hot mix asphalt, the underlying surface shall be cleaned of dust and debris. A prime coat and tack coat shall be applied as shown on the contract drawings and as specified in Section 02748 BITUMINOUS TACK AND PRIME COATS.

3.4.2 Taxiway L: Underlying Concrete Surface

The Contractor shall remove and replace areas of unsound concrete identified in the exposed underlying concrete surface, when directed by the Contracting Officer. For bid purposes, the Contractor shall assume 70 square yards of concrete requires repair.

3.5 TEST SECTION

Prior to full production, the Contractor shall place a test section for each JMF used. The contractor shall construct a test section 250 long and two paver passes wide placed in two lanes, with a longitudinal cold joint. The test section shall be of the same depth as the course which it represents. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same equipment to be used on the remainder of the course represented by the test section. The test section shall be placed as part of the project pavement as approved by the Contracting Officer.

3.5.1 Sampling and Testing for Test Section

One random sample shall be taken at the plant, triplicate specimens compacted, and tested for stability, flow, and laboratory air voids. A portion of the same sample shall be tested for aggregate gradation and asphalt content. Four randomly selected cores shall be taken from the finished pavement mat, and four from the longitudinal joint, and tested for density. Random sampling shall be in accordance with procedures contained in ASTM D 3665. The test results shall be within the tolerances shown in Table 5 for work to continue. If all test results meet the specified requirements, the test section shall remain as part of the project pavement. If test results exceed the tolerances shown, the test section shall be removed and replaced at no cost to the Government and another test section shall be constructed.

Table 5. Test Section Requirements for Material and Mixture Properties

| Property | Specification Limit |
|--|-----------------------|
| Aggregate Gradation-Percent Passing (Individual Test Result) | |
| No. 4 and larger | JMF plus or minus 4 |
| No. 8, No. 16, No. 30, and No. 50 | JMF plus or minus 3 |
| No. 100 and No. 200 | JMF plus or minus 1 |
| Asphalt Content, Percent (Individual Test Result) | JMF plus or minus 0.5 |
| Laboratory Air Voids, Percent (Average of 3 specimens) | JMF plus or minus 1.0 |
| VMA, Percent (Average of 3 specimens) | 14 minimum |
| Stability, pounds (Average of 3 specimens) | 1800 minimum |
| Flow, 0.01 inches (Average of 3 specimens) | 8 - 18 |
| Mat Density, Percent of Marshall | |

Table 5. Test Section Requirements for Material and Mixture Properties

| | |
|---|-------------------------------------|
| Property (Average of 4 Random Cores) | Specification Limit 97.0 - 100.5 |
| Joint Density, Percent of Marshall (Average of 4 Random Cores) | 95.5 - 100.5 |

3.5.2 Additional Test Sections

If the initial test section should prove to be unacceptable, the necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made. As directed by the Contracting Officer, the initial test section may be removed and a second test section shall then be placed. Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Full production shall not begin until an acceptable section has been constructed and accepted.

3.6 TESTING LABORATORY

The laboratory used to develop the JMF shall meet the requirements of ASTM D 3666. A certification signed by the manager of the laboratory stating that it meets these requirements or clearly listing all deficiencies shall be submitted to the Contracting Officer prior to the start of construction.

The certification shall contain as a minimum:

- a. Qualifications of personnel; laboratory manager, supervising technician, and testing technicians.
- b. A listing of equipment to be used in developing the job mix.
- c. A copy of the laboratory's quality control system.
- d. Evidence of participation in the AASHTO Materials Reference Laboratory (AMRL) program.

3.7 TRANSPORTING AND PLACING

3.7.1 Transporting

The hot-mix asphalt shall be transported from the mixing plant to the site in clean, tight vehicles. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Adequate artificial lighting shall be provided for night placements. Hauling over freshly placed material will not be permitted until the material has been compacted as specified, and allowed to cool to 140 degrees F. To deliver mix to the paver, the Contractor shall use a material transfer vehicle which shall be operated to produce continuous forward motion of the paver.

3.7.2 Placing

The mix shall be placed and compacted at a temperature suitable for

obtaining density, surface smoothness, and other specified requirements. Upon arrival, the mixture shall be placed to the full width by an asphalt paver; it shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of 10 feet. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot; however, the joint in the surface course shall be at the centerline of the pavement. Transverse joints in one course shall be offset by at least 10 feet from transverse joints in the previous course. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. On isolated areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools.

3.8 COMPACTION OF MIXTURE

After placing, the mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be compacted as soon as possible without causing displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor, with the exception that the Contractor shall not apply more than three passes with a vibratory roller in the vibrating mode. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once. Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained. To prevent adhesion of the mixture to the roller, the wheels shall be kept properly moistened but excessive water will not be permitted. In areas not accessible to the roller, the mixture shall be thoroughly compacted with hand tampers. Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or is in any way defective shall be removed full depth, replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching will not be allowed.

3.9 JOINTS

The formation of joints shall be made ensuring a continuous bond between the courses to obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

3.9.1 Taxiway L: Saw-Cut Joints

The Contractor shall determine, through the use of an accurate survey, the exact locations of all existing joints in the existing underlying concrete

slab of Taxiway L. Upon completion of the new asphalt pavement, the contractor shall saw-cut a joint in the new asphalt pavement such that the new joint exactly corresponds to the location of the joint in the underlying concrete slab.

3.9.2 Transverse Joints

The roller shall not pass over the unprotected end of the freshly laid mixture, except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. The cutback material shall be removed from the project. In both methods, all contact surfaces shall be given a light tack coat of asphalt material before placing any fresh mixture against the joint.

3.9.3 Longitudinal Joints

Longitudinal joints which are irregular, damaged, uncompacted, cold (less than 175 degrees F), or otherwise defective, shall be cut back a minimum of 2 inches from the edge with a cutting wheel to expose a clean, sound vertical surface for the full depth of the course. All cutback material shall be removed from the project. All contact surfaces shall be given a light tack coat of asphalt material prior to placing any fresh mixture against the joint. The Contractor will be allowed to use an alternate method if it can be demonstrated that density, smoothness, and texture can be met.

3.10 CONTRACTOR QUALITY CONTROL

3.10.1 General Quality Control Requirements

The Contractor shall develop an approved Quality Control Plan. Hot-mix asphalt for payment shall not be produced until the quality control plan has been approved. The plan shall address all elements which affect the quality of the pavement including, but not limited to:

- a. Mix Design
- b. Aggregate Grading
- c. Quality of Materials
- d. Stockpile Management
- e. Proportioning
- f. Mixing and Transportation
- g. Mixture Volumetrics
- h. Moisture Content of Mixtures
- i. Placing and Finishing

- j. Joints
- k. Compaction
- l. Surface Smoothness

3.10.2 Quality Control Testing

The Contractor shall perform all quality control tests applicable to these specifications and as set forth in the Quality Control Program. The testing program shall include, but shall not be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, moisture in the asphalt mixture, laboratory air voids, stability, flow, in-place density, grade and smoothness. A Quality Control Testing Plan shall be developed as part of the Quality Control Program.

3.10.2.1 Asphalt Content

A minimum of two tests to determine asphalt content will be performed per lot (a lot is defined in paragraph MATERIAL ACCEPTANCE AND PERCENT PAYMENT) by either the extraction method in accordance with ASTM D 2172, Method A or B, the ignition method in accordance with the AASHTO TP53, ASTM D 6307 or the nuclear method in accordance with ASTM D 4125, provided the nuclear gauge is calibrated for the specific mix being used. For the extraction method, the weight of ash, as described in ASTM D 2172, shall be determined as part of the first extraction test performed at the beginning of plant production; and as part of every tenth extraction test performed thereafter, for the duration of plant production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture.

3.10.2.2 Gradation

Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of recovered aggregate in accordance with ASTM D 5444. When asphalt content is determined by the nuclear method, aggregate gradation shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix plants. For batch plants, aggregates shall be tested in accordance with ASTM C 136 using actual batch weights to determine the combined aggregate gradation of the mixture.

3.10.2.3 Temperatures

Temperatures shall be checked at least four times per lot, at necessary locations, to determine the temperature at the dryer, the asphalt cement in the storage tank, the asphalt mixture at the plant, and the asphalt mixture at the job site.

3.10.2.4 Aggregate Moisture

The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

3.10.2.5 Moisture Content of Mixture

The moisture content of the mixture shall be determined at least once per lot in accordance with ASTM D 1461 or an approved alternate procedure.

3.10.2.6 Laboratory Air Voids, Marshall Stability and Flow

Mixture samples shall be taken at least four times per lot and compacted into specimens, using 75 blows per side with the Marshall hammer as described in ASTM D 1559. After compaction, the laboratory air voids of each specimen shall be determined, as well as the Marshall stability and flow.

3.10.2.7 In-Place Density

The Contractor shall conduct any necessary testing to ensure the specified density is achieved. A nuclear gauge may be used to monitor pavement density in accordance with ASTM D 2950.

3.10.2.8 Grade and Smoothness

The Contractor shall conduct the necessary checks to ensure the grade and smoothness requirements are met in accordance with paragraph MATERIAL ACCEPTANCE AND PERCENT PAYMENT.

3.10.2.9 Additional Testing

Any additional testing, which the Contractor deems necessary to control the process, may be performed at the Contractor's option.

3.10.2.10 QC Monitoring

The Contractor shall submit all QC test results to the Contracting Officer on a daily basis as the tests are performed. The Contracting Officer reserves the right to monitor any of the Contractor's quality control testing and to perform duplicate testing as a check to the Contractor's quality control testing.

3.10.3 Sampling

When directed by the Contracting Officer, the Contractor shall sample and test any material which appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

3.10.4 Control Charts

For process control, the Contractor shall establish and maintain linear control charts on both individual samples and the running average of last four samples for the parameters listed in Table 6, as a minimum. These control charts shall be posted as directed by the Contracting Officer and shall be kept current at all times. The control charts shall identify the project number, the test parameter being plotted, the individual sample

numbers, the Action and Suspension Limits listed in Table 6 applicable to the test parameter being plotted, and the Contractor's test results. Target values from the JMF shall also be shown on the control charts as indicators of central tendency for the cumulative percent passing, asphalt content, and laboratory air voids parameters. When the test results exceed either applicable Action Limit, the Contractor shall take immediate steps to bring the process back in control. When the test results exceed either applicable Suspension Limit, the Contractor shall halt production until the problem is solved. The Contractor shall use the control charts as part of the process control system for identifying trends so that potential problems can be corrected before they occur. Decisions concerning mix modifications shall be made based on analysis of the results provided in the control charts. The Quality Control Plan shall indicate the appropriate action which shall be taken to bring the process into control when certain parameters exceed their Action Limits.

Table 6. Action and Suspension Limits for the Parameters to be Plotted on Individual and Running Average Control Charts

| Parameter to be Plotted | Individual Samples | | Running Average of Last Four Samples | |
|--|--|-------------------|--------------------------------------|-------------------|
| | Action Limit | Suspension Limit | Action Limit | Suspension Limit |
| No. 4 sieve, Cumulative % Passing, deviation from JMF target; plus or minus values | 6 | 8 | 4 | 5 |
| No. 30 sieve, Cumulative % Passing, deviation from JMF target; plus or minus values | 4 | 6 | 3 | 4 |
| No. 200 sieve, Cumulative % Passing, deviation from JMF target; plus or minus values | 1.4 | 2.0 | 1.1 | 1.5 |
| Stability, pounds (minimum) | 1800 | 1700 | 1900 | 1800 |
| Flow, 0.01 inches | 8 min. 16 max. | 7 min. 17 max. | 9 min. 15 max. | 8 min. 16 max. |
| Asphalt content, % deviation from JMF target; plus or minus value | 0.4 | 0.5 | 0.2 | 0.3 |
| Laboratory Air Voids, % deviation from JMF target value | No specific action and suspension limits set since this parameter is used to determine percent payment | | | |
| In-place Mat Density, % of Marshall density | No specific action and suspension limits set since this parameter is used to determine percent payment | | | |

Table 6. Action and Suspension Limits for the Parameters to be Plotted on Individual and Running Average Control Charts

| Parameter to be Plotted | Individual Samples | | Running Average of Last Four Samples | |
|---|--|------------------|--------------------------------------|------------------|
| | Action Limit | Suspension Limit | Action Limit | Suspension Limit |
| ----- | | | | |
| In-place Joint Density, % of Marshall density | No specific action and suspension limits set since this parameter is used to determine percent payment | | | |

3.11 MATERIAL ACCEPTANCE AND PERCENT PAYMENT

The Government's quality assurance (QA) program for this project, specified below, will be separate and distinct from the Contractor's quality control (QC) program specified above. Testing for acceptability of work will be performed an independent laboratory hired by the Contractor. Acceptance of the plant produced mix and in-place requirements will be on a lot to lot basis. A standard lot for all requirements will be equal to 2000 pound tons. Where appropriate, adjustment in payment for individual lots of hot-mix asphalt will be made based on in-place density, laboratory air voids, grade and smoothness in accordance with the following paragraphs. Grade and surface smoothness determinations will be made on the lot as a whole. Exceptions or adjustments to this will be made in situations where the mix within one lot is placed as part of both the intermediate and surface courses, thus grade and smoothness measurements for the entire lot cannot be made. In order to evaluate laboratory air voids and in-place (field) density, each lot will be divided into four equal sublots.

3.11.1 Percent Payment

When a lot of material fails to meet the specification requirements for 100 percent pay as outlined in the following paragraphs, that lot shall be removed and replaced, or accepted at a reduced price which will be computed by multiplying the unit price by the lot's pay factor. The lot pay factor is determined by taking the lowest computed pay factor based on either laboratory air voids, in-place density, grade or smoothness (each discussed below). Pay factors based on different criteria (i.e., laboratory air voids and in-place density) of the same lot will not be multiplied together to get a lower lot pay factor. At the end of the project, an average of all lot pay factors will be calculated. If this average lot pay factor exceeds 95.0 percent, then the percent payment for the entire project will be 100 percent of the unit bid price. If the average lot pay factor is less than 95.0 percent, then each lot will be paid for at the unit price multiplied by the lot's pay factor. For any lots which are less than 2000 pound tons, a weighted lot pay factor will be used to calculate the average lot pay factor.

3.11.2 Sublot Sampling

One random mixture sample for determining laboratory air voids, theoretical maximum density, and for any additional testing the Contracting Officer desires, will be taken from a loaded truck delivering mixture to each subplot, or other appropriate location for each subplot. All samples will be selected randomly, using commonly recognized methods of assuring randomness conforming to ASTM D 3665 and employing tables of random numbers or computer programs. Laboratory air voids will be determined from three laboratory compacted specimens of each subplot sample in accordance with ASTM D 1559. The specimens will be compacted within 2 hours of the time the mixture was loaded into trucks at the asphalt plant. Samples will not be reheated prior to compaction and insulated containers will be used as necessary to maintain the temperature.

3.11.3 Additional Sampling and Testing

The Contracting Officer reserves the right to direct additional samples and tests for any area which appears to deviate from the specification requirements. The cost of any additional testing will be paid for by the Government. Testing in these areas will be in addition to the lot testing, and the requirements for these areas will be the same as those for a lot.

3.11.4 Laboratory Air Voids

Laboratory air voids will be calculated in accordance with ASTM D 3203 by determining the Marshall density of each lab compacted specimen using ASTM D 2726 and determining the theoretical maximum density of every other subplot sample using ASTM D 2041. Laboratory air void calculations for each subplot will use the latest theoretical maximum density values obtained, either for that subplot or the previous subplot. The mean absolute deviation of the four laboratory air void contents (one from each subplot) from the JMF air void content will be evaluated and a pay factor determined from Table 7. All laboratory air void tests will be completed and reported within 24 hours after completion of construction of each lot.

3.11.5 Mean Absolute Deviation

An example of the computation of mean absolute deviation for laboratory air voids is as follows: Assume that the laboratory air voids are determined from 4 random samples of a lot (where 3 specimens were compacted from each sample). The average laboratory air voids for each subplot sample are determined to be 3.5, 3.0, 4.0, and 3.7. Assume that the target air voids from the JMF is 4.0. The mean absolute deviation is then:

$$\text{Mean Absolute Deviation} = ((3.5 - 4.0) + (3.0 - 4.0) + (4.0 - 4.0) + (3.7 - 4.0))/4$$

$$= (0.5 + 1.0 + 0.0 + 0.3)/4 = (1.8)/4 = 0.45$$

The mean absolute deviation for laboratory air voids is determined to be 0.45. It can be seen from Table 7 that the lot's pay factor based on laboratory air voids, is 100 percent.

Table 7. Pay Factor Based on Laboratory Air Voids

| Mean Absolute Deviation of Lab Air Voids from JMF | Pay Factor, % |
|---|---------------|
| 0.60 or less | 100 |
| 0.61 - 0.80 | 98 |
| 0.81 - 1.00 | 95 |
| 1.01 - 1.20 | 90 |
| Above 1.20 | reject (0) |

3.11.6 In-place Density

3.11.6.1 General Density Requirements

For determining in-place density, one random core will be taken by the Government from the mat (interior of the lane) of each subplot, and one random core will be taken from the joint (immediately over joint) of each subplot. Each random core will be full thickness of the layer being placed.

When the random core is less than 1 inch thick, it will not be included in the analysis. In this case, another random core will be taken. After air drying to a constant weight, cores obtained from the mat and from the joints will be used for in-place density determination.

3.11.6.2 Mat and Joint Densities

The average in-place mat and joint densities are expressed as a percentage of the average Marshall density for the lot. The Marshall density for each lot will be determined as the average Marshall density of the four random samples (3 specimens compacted per sample). The average in-place mat density and joint density for a lot are determined and compared with Table 8 to calculate a single pay factor per lot based on in-place density, as described below. First, a pay factor for both mat density and joint density are determined from Table 8. The area associated with the joint is then determined and will be considered to be 10 feet wide times the length of completed longitudinal construction joint in the lot. This area will not exceed the total lot size. The length of joint to be considered will be that length where a new lane has been placed against an adjacent lane of hot-mix asphalt pavement, either an adjacent freshly paved lane or one paved at any time previously. The area associated with the joint is expressed as a percentage of the total lot area. A weighted pay factor for the joint is determined based on this percentage (see example below). The pay factor for mat density and the weighted pay factor for joint density is compared and the lowest selected. This selected pay factor is the pay factor based on density for the lot. When the Marshall density on both sides of a longitudinal joint is different, the average of these two densities will be used as the Marshall density needed to calculate the percent joint density. All density results for a lot will be completed and reported within 24 hours after the construction of that lot.

Table 8. Pay Factor Based on In-place Density

| Average Mat Density (4 Cores) | Pay Factor, % | Average Joint Density (4 Cores) |
|----------------------------------|---------------|------------------------------------|
| 98.0 or 100 | 100.0 | Above 96.5 |
| 97.9 | 100.0 | 96.4 |
| 97.8 or 100.1 | 99.9 | 96.3 |
| 97.7 | 99.8 | 96.2 |
| 97.6 or 100.2 | 99.6 | 96.1 |
| 97.5 | 99.4 | 96.0 |
| 97.4 or 100.3 | 99.1 | 95.9 |
| 97.3 | 98.7 | 95.8 |
| 97.2 or 100.4 | 98.3 | 95.7 |
| 97.1 | 97.8 | 95.6 |
| 97.0 or 100.5 | 97.3 | 95.5 |
| 96.9 | 96.3 | 95.4 |
| 96.8 or 100.6 | 94.1 | 95.3 |
| 96.7 | 92.2 | 95.2 |
| 96.6 or 100.7 | 90.3 | 95.1 |
| 96.5 | 87.9 | 95.0 |
| 96.4 or 100.8 | 85.7 | 94.9 |
| 96.3 | 83.3 | 94.8 |
| 96.2 or 100.9 | 80.6 | 94.7 |
| 96.1 | 78.0 | 94.6 |
| 96.0 or 101.0 | 75.0 | 94.5 |
| below 96.0, above 101.0 | 0.0 (reject) | below 94.5 |

3.11.6.3 Pay Factor Based on In-place Density

An example of the computation of a pay factor (in I-P units only) based on in-place density, is as follows: Assume the following test results for field density made on the lot: (1) Average mat density = 97.2 percent (of lab density). (2) Average joint density = 95.5 percent (of lab density). (3) Total area of lot = 30,000 square feet. (4) Length of completed longitudinal construction joint = 2000 feet.

a. Step 1: Determine pay factor based on mat density and on joint density, using Table 8:

Mat density of 97.2 percent = 98.3 pay factor.

Joint density of 95.5 percent = 97.3 pay factor.

b. Step 2: Determine ratio of joint area (length of longitudinal joint x 10 ft) to mat area (total paved area in the lot): Multiply the length of completed longitudinal construction joint by the specified 10 ft. width and divide by the mat area (total paved area in the lot).

$(2000 \text{ ft.} \times 10 \text{ ft.}) / 30000 \text{ sq.ft.} = 0.6667$ ratio of joint area to mat area (ratio).

c. Step 3: Weighted pay factor (wpf) for joint is determined as

indicated below:

$$\begin{aligned} \text{wpf} &= \text{joint pay factor} + (100 - \text{joint pay factor}) (1 - \text{ratio}) \text{wpf} \\ &= 97.3 + (100-97.3) (1-.6667) = 98.2\% \end{aligned}$$

d. Step 4: Compare weighted pay factor for joint density to pay factor for mat density and select the smaller:

Pay factor for mat density: 98.3%. Weighted pay factor for joint density: 98.2%

Select the smaller of the two values as pay factor based on density: 98.2%

3.11.7 Grade

The final wearing surface of pavement shall conform to the elevations and cross sections shown and shall vary not more than 0.05 foot from the plan grade established and approved at site of work. Finished surfaces at juncture with other pavements shall coincide with finished surfaces of abutting pavements. Deviation from the plan elevation will not be permitted in areas of pavements where closer conformance with planned elevation is required for the proper functioning of drainage and other appurtenant structures involved. The final wearing surface of the pavement will be tested for conformance with specified plan grade requirements. The grade will be determined by running lines of levels at intervals of 25 feet, or less, longitudinally and transversely, to determine the elevation of the completed pavement surface. Within 5 working days, after the completion of a particular lot incorporating the final wearing surface, the Contracting Officer will inform the Contractor in writing, of the results of the grade-conformance tests. When more than 5 percent of all measurements made within a lot are outside the 0.05 foot tolerance, the pay factor based on grade for that lot will be 95 percent. In areas where the grade exceeds the tolerance by more than 50 percent, the Contractor shall remove the surface lift full depth; the Contractor shall then replace the lift with hot-mix asphalt to meet specification requirements, at no additional cost to the Government. Diamond grinding may be used to remove high spots to meet grade requirements. Skin patching for correcting low areas or planing or milling for correcting high areas will not be permitted.

3.11.8 Surface Smoothness

The Contractor shall use the following method to test and evaluate surface smoothness of the pavement. All testing shall be performed in the presence of the Contracting Officer. Detailed notes of the results of the testing shall be kept and a copy furnished to the Government immediately after each day's testing. Where drawings show required deviations from a plane surface (crowns, drainage inlets, etc.), the surface shall be finished to meet the approval of the Contracting Officer.

3.11.8.1 Smoothness Requirements

a. Straightedge Testing: The finished surfaces of the pavements shall have no abrupt change of 1/8 inch or more, and all pavements shall be

within the tolerances specified in Table 9 when checked with an approved 12 foot straightedge.

Table 9. Straightedge Surface Smoothness--Pavements

| Pavement Category ----- | Direction of Testing ----- | Tolerance, inches ----- |
|--|-------------------------------|----------------------------|
| Runways and taxiways | Longitudinal | 1/8 |
| | Transverse | 1/4 |
| Calibration hardstands and compass swinging bases | Longitudinal | 1/8 |
| | Transverse | 1/8 |
| All other paved areas | Longitudinal | 1/4 |
| | Transverse | 1/4 |

3.11.8.2 Testing Method

After the final rolling, but not later than 24 hours after placement, the surface of the pavement in each entire lot shall be tested by the Contractor in such a manner as to reveal all surface irregularities exceeding the tolerances specified above. Separate testing of individual sublots is not required. If any pavement areas are ground, these areas shall be retested immediately after grinding. The entire area of the pavement shall be tested in both a longitudinal and a transverse direction on parallel lines. The transverse lines shall be 15 feet or less apart, as directed. The longitudinal lines shall be at the centerline of each paving lane for lines less than 20 feet and at the third points for lanes 20 feet or greater. Other areas having obvious deviations shall also be tested. Longitudinal testing lines shall be continuous across all joints.

a. Straightedge Testing. The straightedge shall be held in contact with the surface and moved ahead one-half the length of the straightedge for each successive measurement. The amount of surface irregularity shall be determined by placing the freestanding (unleveled) straightedge on the pavement surface and allowing it to rest upon the two highest spots covered by its length, and measuring the maximum gap between the straightedge and the pavement surface in the area between these two high points.

3.11.8.3 Payment Adjustment for Smoothness

a. Straightedge Testing. Location and deviation from straightedge for all measurements shall be recorded. When between 5.0 and 10.0 percent of all measurements made within a lot exceed the tolerance specified in paragraph Smoothness Requirements above, after any reduction of high spots or removal and replacement, the computed pay factor for that lot based on surface smoothness, will be 95 percent. When more than 10.0 percent of all measurements exceed the tolerance, the computed pay factor will be 90 percent. When between 15.0 and 20.0 percent of all measurements exceed the tolerance, the computed pay factor will be 75 percent. When 20.0 percent or more of the measurements exceed the tolerance, the lot shall be removed and replaced at no additional cost to the Government. Regardless of the

above, any small individual area with surface deviation which exceeds the tolerance given above by more than 50 percent, shall be corrected by diamond grinding to meet the specification requirements above or shall be removed and replaced at no additional cost to the Government.

c. Bumps ("Must Grind" Areas). Any bumps ("must grind" areas) shown on the profilograph trace which exceed 0.4 inch in height shall be reduced by diamond grinding until they do not exceed 0.3 inch when retested. Such grinding shall be tapered in all directions to provide smooth transitions to areas not requiring grinding. The following will not be permitted: (1) skin patching for correcting low areas, (2) planing or milling for correcting high areas. At the Contractor's option, pavement areas, including ground areas, may be rechecked with a profilograph in order to record a lower Profile Index.

3.12 PROTECTION OF PAVEMENT

After final rolling, no vehicular traffic of any kind shall be permitted on the pavement until the pavement has cooled to 140 degrees F.

-- End of Section --

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SECTION 02760

PAVEMENT JOINT INSTALLATION

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in this text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

| | |
|-------------|--|
| ASTM C 509 | (1998) Elastomeric Cellular Preformed Gasket and Sealing Material |
| ASTM D 789 | (1998) Determination of Relative Viscosity, Melting Point, and Moisture Content of Polyamide (PA) |
| ASTM D 3569 | (1995) Joint Sealant, Hot-Applied, Elastomeric, Jet-Fuel-Resistant-Type for Portland Cement Concrete Pavements |

CORPS OF ENGINEERS (COE)

| | |
|---------------|--|
| COE CRD-C 525 | (1989) Corps of Engineers Test Method for Evaluation of Hot-Applied Joint Sealants for Bubbling Due to Heating |
|---------------|--|

FEDERAL SPECIFICATIONS (FS)

| | |
|-------------|--|
| FS SS-S-200 | (Rev E; Am 2) Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold-Applied, for Portland Cement Concrete Pavement |
|-------------|--|

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-06 Instructions

Manufacturer's Recommendations for Hot-Poured and Cold-Poured Sealants; GA-E.

Where installation procedures, or any part thereof, are required to be in

accordance with the manufacturer's recommendations, printed copies of these recommendations, 21 days prior to use on the project. Installation of the material will not be allowed until 21 days after the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

SD-07 Schedules

Construction Equipment List; GA-E.

List of proposed equipment to be used in performance of hot-poured and cold-poured joint installation work including descriptive data, 14 days prior to use on the project.

SD-08 Statements

Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the installation of joints.

SD-13 Certificates

Hot-Poured and Cold-Poured Sealant; GA-A; Primer; GA-A.Backup Materials; GA-A; Bond Breaking Tapes; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the materials. The affidavit shall attest that the materials meet the specific requirements stated in these specifications.

SD-14 Samples

Hot-Poured and Cold-Poured Materials; GA-A.

Samples of the materials (sealant, primer if required, and backup material), in sufficient quantity for testing and approval 30 days prior to the beginning of work. No material will be allowed to be used until it has been approved.

1.3 SAFETY

Joint sealant shall not be placed within 25 feet of any liquid oxygen (LOX) equipment, LOX storage, or LOX piping. Joints in this area shall be thoroughly cleaned and left unsealed.

1.4 TEST REQUIREMENTS

The joint sealant and backup or separating material shall be tested for conformance with the referenced applicable material specification. Testing of the materials shall be performed in an approved independent laboratory and 5 certified copies of the test reports shall be submitted for approval 21 days prior to the use of the materials at the job site. Samples will be

retained by the Government for possible future testing should the materials appear defective during or after application. Conformance with the requirements of the laboratory tests specified will not constitute final acceptance of the materials. Final acceptance will be based on the performance of the in-place materials.

1.5 EQUIPMENT

Machines, tools, and equipment used in the performance of the work required by this section shall be approved before the work is started and shall be maintained in satisfactory condition at all times.

1.5.1 Joint Cleaning Equipment

1.5.1.1 Tractor-Mounted Routing Tool

The routing tool used for removing old sealant from the joints shall be of such shape and dimensions and so mounted on the tractor that it will not damage the sides of the joints. The tool shall be designed so that it can be adjusted to remove the old material to varying depths as required. The use of V-shaped tools or rotary impact routing devices will not be permitted. Hand-operated spindle routing devices may be used to clean and enlarge random cracks.

1.5.1.2 Concrete Saw

A self-propelled power saw with water-cooled diamond or abrasive saw blades will be provided for removing old sealant, cutting joints to the depths and widths specified or for refacing joints or cleaning sawed joints where sandblasting does not provide a clean joint.

1.5.1.3 Sandblasting Equipment

Sandblasting equipment shall include an air compressor, hose, and long-wearing venturi-type nozzle of proper size, shape and opening. The maximum nozzle opening should not exceed 1/4 inch. The air compressor shall be portable and shall be capable of furnishing not less than 150 cubic feet per minute and maintaining a line pressure of not less than 90 psi at the nozzle while in use. Compressor capability under job conditions must be demonstrated before approval. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water. The nozzle shall have an adjustable guide that will hold the nozzle aligned with the joint approximately 1 inch above the pavement surface. The height, angle of inclination and the size of the nozzle shall be adjusted as necessary to secure satisfactory results.

1.5.1.4 Waterblasting Equipment

Waterblasting equipment shall include a trailer-mounted water tank, pumps, high-pressure hose, wand with safety release cutoff control, nozzle, and auxiliary water resupply equipment. The water tank and auxiliary resupply equipment shall be of sufficient capacity to permit continuous operations. The nozzle shall have an adjustable guide that will hold the nozzle aligned with the joint approximately 1 inch above the pavement surface. The

height, angle of inclination and the size of the nozzle shall be adjustable as necessary to obtain satisfactory results. A pressure gauge mounted at the pump shall show at all times the pressure in pounds per square inch at which the equipment is operating.

1.5.1.5 Hand Tools

Hand tools may be used, when approved, for removing defective sealant from a crack and repairing or cleaning the crack faces.

1.5.2 Sealing Equipment

1.5.2.1 Hot-Poured Sealing Equipment

The unit applicators used for heating and installing ASTM D 3569 joint sealant materials shall be mobile and shall be equipped with a double-boiler, agitator-type kettle with an oil medium in the outer space for heat transfer; a direct-connected pressure-type extruding device with a nozzle shaped for inserting in the joint to be filled; positive temperature devices for controlling the temperature of the transfer oil and sealant; and a recording type thermometer for indicating the temperature of the sealant. The applicator unit shall be designed so that the sealant will circulate through the delivery hose and return to the inner kettle when not in use.

1.5.2.2 Two-Component, Cold-Applied, Machine Mix Sealing Equipment

The equipment used for proportioning, mixing, and installing FS SS-S-200 Type M joint sealants shall be designed to deliver two semifluid components through hoses to a portable mixer at a preset ratio of 1 to 1 by volume using pumps with an accuracy of plus or minus 5 percent for the quantity of each component. The reservoir for each component shall be equipped with mechanical agitation devices that will maintain the components in a uniform condition without entrapping air. Provisions shall be incorporated to permit thermostatically controlled indirect heating of the components, when required. However, immediately prior to proportioning and mixing, the temperature of either component shall not exceed 90 degrees F. Screens shall be provided near the top of each reservoir to remove any foreign particles or partially polymerized material that could clog fluid lines or otherwise cause misproportioning or improper mixing of the two components. The equipment shall be capable of thoroughly mixing the two components through a range of application rates of 10 to 60 gallons per hour and through a range of application pressures from 50 to 1500 psi as required by material, climatic, or operating conditions. The mixer shall be designed for the easy removal of the supply lines for cleaning and proportioning of the components. The mixing head shall accommodate nozzles of different types and sizes as may be required by various operations. The dimensions of the nozzle shall be such that the nozzle tip will extend into the joint to allow sealing from the bottom of the joint to the top. The initially approved equipment shall be maintained in good working condition, serviced in accordance with the supplier's instructions, and shall not be altered in any way without obtaining prior approval.

1.6 TRIAL JOINT SEALANT INSTALLATION

Prior to the cleaning and installation of the joints for the entire project, a test section of at least 25 feet long shall be prepared using the specified materials and approved equipment, so as to demonstrate the proposed joint preparation and sealing of all types of joints in the project. Following the completion of the test section and before any other joint is sealed, the test section shall be inspected to determine that the materials and installation meet the requirements specified. If it is determined that the materials or installation do not meet the requirements, the materials shall be removed, and the joints shall be recleaned and resealed at no cost to the Government. When the test section meets the requirements, it may be incorporated into the permanent work and paid for at the contract unit price per linear foot for sealing items scheduled. All other joints shall be prepared and sealed in the manner approved for sealing the test section.

1.7 DELIVERY AND STORAGE

Materials delivered to the job site shall be inspected for defects, unloaded, and stored with a minimum of handling to avoid damage. Storage facilities shall be provided by the Contractor at the job site for maintaining materials at the temperatures and conditions recommended by the manufacturer.

1.8 ENVIRONMENTAL CONDITIONS

The ambient air temperature and the pavement temperature within the joint wall shall be a minimum of 50 degrees F and rising at the time of application of the materials. Sealant shall not be applied if moisture is observed in the joint.

PART 2 PRODUCTS

2.1 SEALANTS

Materials be as follows:

| Area | Sealing Material |
|---|--|
| Where concrete apron abuts new asphalt | FS SS-S-200 Type M; PECORA UREXPAN NR-300 or approved equal |
| All other locations | ASTM D 3569 and COE CRD-C 525 |

2.2 PRIMERS

Primers, when their use is recommended by the manufacturer of the sealant, shall be as recommended by the manufacturer of the sealant.

2.3 BACKUP MATERIALS

The backup material shall be a compressible, nonshrinking, nonstaining, nonabsorbing material and shall be nonreactive with the joint sealant. The

material shall have a melting point at least 5 degrees F greater than the pouring temperature of the sealant being used when tested in accordance with ASTM D 789. The material shall have a water absorption of not more than 5 percent of the sample weight when tested in accordance with ASTM C 509. The backup material shall be 25 plus or minus 5 percent larger in diameter than the nominal width of the crack.

2.4 BOND BREAKING TAPES

The bond breaking tape or separating material shall be a flexible, nonshrinkable, nonabsorbing, nonstaining, and nonreacting adhesive-backed tape. The material shall have a melting point at least 5 degrees F greater than the pouring temperature of the sealant being used when tested in accordance with ASTM D 789. The bond breaker tape shall be approximately 1/8 inch wider than the nominal width of the joint and shall not bond to the joint sealant.

PART 3 EXECUTION

3.1 SCOPE

Hot-poured sealant shall be utilized in all asphalt to asphalt joints. At the joint between the concrete apron and new asphalt, as indicated on the drawings, a cold-poured sealant shall be used.

3.2 PREPARATION OF JOINTS

Immediately before the installation of the sealant, the joints shall be thoroughly cleaned to remove all laitance, curing compound, filler, protrusions of hardened concrete, and old sealant from the sides and upper edges of the joint space to be sealed.

3.2.1 Sandblasting

The underlying concrete surfaces on Taxiway L, and, the new pavement surfaces extending a minimum of 1/2 inch from the joint edges, shall be sandblasted or waterblasted clean. A multiple-pass technique shall be used until the surfaces are free of dust, dirt, curing compound, filler, old sealant residue, or any foreign debris that might prevent the bonding of the sealant to the surface. After final cleaning and immediately prior to sealing, the joints shall be blown out with compressed air and left completely free of debris and water.

3.2.2 Back-Up Material

When the joint opening is of a greater depth than recommended by the manufacturer for the sealant depth, the lower portion of the joint opening shall be plugged or sealed off using a back-up material to prevent the entrance of the sealant below the specified depth. Care shall be taken to ensure that the backup material is placed at the specified depth and is not stretched or twisted during installation.

3.2.3 Bond Breaking Tape

Where inserts or filler materials contain bitumen, or the depth of the joint opening does not allow for the use of a backup material, a bond breaker separating tape will be inserted to prevent incompatibility with the filler materials and three-sided adhesion of the sealant. The tape shall be securely bonded to the bottom of the joint opening so it will not float up into the new sealant.

3.2.4 Rate of Progress of Joint Preparation

The stages of joint preparation which include sandblasting, air pressure cleaning and placing of the back-up material shall be limited to only that lineal footage that can be sealed during the same day.

3.3 PREPARATION OF SEALANTS

3.3.1 Preparation of Hot-Poured Sealants

Sealants conforming to ASTM D 3569 shall not be heated in excess of the safe heating temperature recommended by the manufacturer as shown on the sealant containers. Sealant that has been overheated or subjected to application temperatures for over 4 hours or that has remained in the applicator at the end of the day's operation shall be withdrawn and wasted.

3.3.2 Preparation of Cold-Poured Sealants

The FS SS-S-200 Type M sealant components and containers shall be inspected prior to use. Any materials that contain water, hard caking of any separated constituents, nonreversible jell, or materials that are otherwise unsatisfactory shall be rejected. Settlement of constituents in a soft mass that can be readily and uniformly remixed in the field with simple tools shall not be cause for rejection. Prior to transfer of the components from the shipping containers to the appropriate reservoir of the application equipment, the materials shall be thoroughly mixed to ensure homogeneity of the components and incorporation of all constituents at the time of transfer. When necessary for remixing prior to transfer to the application equipment reservoirs, the components shall be warmed to a temperature not to exceed 90 degrees F by placing the components in heated storage or by other approved methods but in no case shall the components be heated by direct flame, or in a single walled kettle, or a kettle without an oil bath.

3.4 INSTALLATION OF SEALANTS

3.4.1 Time of Application

Joints shall be sealed immediately following final cleaning and following the placement of the separating or backup material. Open joints that cannot be sealed under the conditions specified, or when rain interrupts sealing operations shall be recleaned and allowed to dry prior to installing the sealant.

3.4.2 Sealing Joints

Immediately preceding, but not more than 50 feet ahead of the joint sealing

operations, a final cleaning with compressed air shall be performed. The joints shall be filled from the bottom up to 1/8 inch plus or minus 1/16 inch below the pavement surface. Excess or spilled sealant shall be removed from the pavement by approved methods and shall be discarded. The sealant shall be installed in such a manner as to prevent the formation of voids and entrapped air. In no case shall gravity methods or pouring pots be used to install the sealant material. Traffic shall not be permitted over newly sealed pavement until authorized by the Contracting Officer. When a primer is recommended by the manufacturer, it shall be applied evenly to the joint faces in accordance with the manufacturer's instructions. Joints shall be checked frequently to ensure that the newly installed sealant is cured to a tack-free condition within the time specified.

3.5 INSPECTION

3.5.1 Joint Cleaning

Joints shall be inspected during the cleaning process to correct improper equipment and cleaning techniques that damage the concrete pavement in any manner. Cleaned joints shall be approved prior to installation of the separating or back-up material and joint sealant.

3.5.2 Joint Sealant Application Equipment

The application equipment shall be inspected to ensure conformance to temperature requirements, proper proportioning and mixing (if two-component sealant) and proper installation. Evidences of bubbling, improper installation, failure to cure or set shall be cause to suspend operations until causes of the deficiencies are determined and corrected.

3.5.3 Joint Sealant

The joint sealant shall be inspected for proper rate of cure and set, bonding to the joint walls, cohesive separation within the sealant, reversion to liquid, entrapped air and voids. Sealants exhibiting any of these deficiencies at any time prior to the final acceptance of the project shall be removed from the joint, wasted, and replaced as specified herein at no additional cost to the Government.

3.6 CLEAN-UP

Upon completion of the project, all unused materials shall be removed from the site and the pavement shall be left in a clean condition.

-- End of Section --

SECTION 02763

PAVEMENT MARKINGS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

FEDERAL SPECIFICATIONS (FS)

FS TT-B-1325 (Rev C; Notice 1) Beads (Glass Spheres)
Retro-Reflective (Metric)

FS TT-P-1952 (Rev D) Paint, Traffic and Airfield
Marking, Waterborne (Metric)

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Equipment Lists; GA-A.

Lists of proposed equipment, including descriptive data, and notifications of proposed Contractor actions as specified in this section. List of removal equipment shall include descriptive data indicating area of coverage per pass, pressure adjustment range, tank and flow capacities, and safety precautions required for the equipment operation.

SD-06 Instructions

Mixing, Thinning and Application; FIO.

Manufacturer's current printed product description and Material Safety Data Sheets (MSDS) for each type paint/color proposed for use.

SD-08 Statements

Qualifications; FIO.

Document certifying that personnel are qualified for equipment operation and handling of chemicals.

SD-09 Reports

Material Tests; GA-A.

Certified copies of the test reports, prior to the use of the materials at

the jobsite. Testing shall be performed in an approved independent laboratory.

SD-13 Certificates

Paint; GA-A; Reflective Media; GA-A.

The Contractor shall furnish the Contracting Officer no less than 7 days in advance of delivery of material to the work site, in duplicate, an affidavit signed by a legally authorized official from the source of the materials. The affidavit shall attest that the materials meet the specific requirements stated in these specifications.

Volatile Organic Compound (VOC) Content; FIO.

Certificate stating that the proposed pavement marking paint meets the VOC regulations of the local Air Pollution Control District having jurisdiction over the geographical area in which the project is located.

1.3 DELIVERY AND STORAGE

All materials shall be delivered and stored in sealed containers that plainly show the designated name, formula or specification number, batch number, color, date of manufacture, manufacturer's name, and directions, all of which shall be plainly legible at time of use.

1.4 EQUIPMENT

All machines, tools and equipment used in the performance of the work shall be approved and maintained in satisfactory operating condition. Equipment operating on roads and runways shall display low speed traffic markings and traffic warning lights.

1.4.1 Paint Application Equipment

The equipment to apply paint to pavements shall be a self-propelled or mobile-drawn pneumatic spraying machine with suitable arrangements of atomizing nozzles and controls to obtain the specified results. The machine shall have a speed during application not less than 5 mph, and shall be capable of applying the stripe widths indicated, at the paint coverage rate specified in paragraph APPLICATION, and of even uniform thickness with clear-cut edges. The equipment used to apply the paint binder to airfield pavements shall be a self-propelled or mobile-drawn pneumatic spraying machine with an arrangement of atomizing nozzles capable of applying a line width at any one time in multiples of 6 inches, from 6 inches to 36 inches. The paint applicator shall have paint reservoirs or tanks of sufficient capacity and suitable gauges to apply paint in accordance with requirements specified. Tanks shall be equipped with suitable air-driven mechanical agitators. The spray mechanism shall be equipped with quick-action valves conveniently located, and shall include necessary pressure regulators and gauges in full view and reach of the operator. Paint strainers shall be installed in paint supply lines to ensure freedom from residue and foreign matter that may cause malfunction of the spray guns. The paint applicator shall be readily adaptable for attachment of an air-actuated dispenser for the reflective media approved for use. Pneumatic spray guns shall be provided for hand application of paint in areas where the mobile paint applicator cannot be used.

1.4.2 Surface Preparation Equipment

1.4.2.1 Sandblasting Equipment

Sandblasting equipment shall include an air compressor, hoses, and nozzles of proper size and capacity as required for cleaning surfaces to be painted. The compressor shall be capable of furnishing not less than 150 cfm of air at a pressure of not less than 90 psi at each nozzle used, and shall be equipped with traps that will maintain the compressed air free of oil and water.

1.4.2.2 Waterblast Equipment

The water pressure shall be specified at 2600 psi at 140 degrees F in order to adequately clean the surfaces to be marked.

1.4.3 Marking Removal Equipment

Equipment shall be mounted on rubber tires and shall be capable of removing markings from the pavement without damaging the pavement surface or joint sealant. Waterblasting equipment shall be capable of producing an adjustable, pressurized stream of water. Sandblasting equipment shall include an air compressor, hoses, and nozzles. The compressor shall be equipped with traps to maintain the air free of oil and water.

1.4.3.1 Shotblasting Equipment

Shotblasting equipment shall be capable of producing an adjustable depth of removal of marking and pavement. Each unit shall be self-cleaning and self-contained, shall be able to confine dust and debris from the operation, and shall be capable of recycling the abrasive for reuse.

1.4.3.2 Chemical Equipment

Chemical equipment shall be capable of application and removal of chemicals from the pavement surface, and shall leave only non-toxic biodegradeable residue.

1.5 MAINTENANCE OF TRAFFIC

The performance of work in the controlled zones of airfields shall be coordinated with the Contracting Officer and with the Flight Operations Officer. Verbal communications shall be maintained with the control tower before and during work in the controlled zones of the airfield. The control tower shall be advised when the work is completed. A radio for this purpose shall be provided by the Contractor and approved by the Contracting Office.

1.6 WEATHER LIMITATIONS FOR REMOVAL

Pavement surface shall be free of snow, ice, or slush. Surface temperature shall be at least 40 degrees F and rising at the beginning of operations, except those involving shot or sand blasting. Operation shall cease during thunderstorms. Operation shall cease during rainfall, except for waterblasting and removal of previously applied chemicals. Waterblasting shall cease where surface water accumulation alters the effectiveness of material removal.

PART 2 PRODUCTS

2.1 PAINT

The paint shall be homogeneous, easily stirred to smooth consistency, and shall show no hard settlement or other objectionable characteristics during a storage period of 6 months. Paints for airfields, roads, and streets shall conform to FS TT-P-1952, color as indicated. Pavement marking paints shall comply with applicable state and local laws enacted to ensure compliance with Federal Clean Air Standards. Paint materials shall conform to the restrictions of the local Air Pollution Control District.

2.2 REFLECTIVE MEDIA

Reflective media for airfields, roads, and streets shall conform to FS TT-B-1325, Type III, Gradation A.

2.3 SAMPLING AND TESTING

Materials proposed for use shall be stored on the project site in sealed and labeled containers, or segregated at source of supply, sufficiently in advance of needs to allow 60 days for testing. Upon notification by the Contractor that the material is at the site or source of supply, a sample shall be taken by random selection from sealed containers by the Contractor in the presence of a representative of the Contracting Officer. Samples shall be clearly identified by designated name, specification number, batch number, manufacturer's formulation number, project contract number, intended use, and quantity involved. Testing shall be performed in a US Army Corps of Engineers approved independent laboratory. If materials are approved based on reports furnished by the Contractor, samples will be retained by the Government for possible future testing should the material appear defective during or after application.

PART 3 EXECUTION

3.1 SCOPE

The work includes those markings indicated on the contract drawings and any additional pavement markings required to indicate temporary changes in taxiway traffic patterns.

3.2 SURFACE PREPARATION

Surfaces to be marked shall be thoroughly cleaned before application of the pavement marking material. Dust, dirt, and other granular surface deposits shall be removed by sweeping, blowing with compressed air, rinsing with water or a combination of these methods as required. Rubber deposits, surface laitance, existing paint markings, and other coatings adhering to the pavement shall be completely removed with scrapers, wire brushes, sandblasting, approved chemicals, or mechanical abrasion as directed. Areas of old pavement affected with oil or grease shall be scrubbed with several applications of trisodium phosphate solution or other approved detergent or degreaser, and rinsed thoroughly after each application. After cleaning, oil-soaked areas shall be sealed with cut shellac to prevent bleeding through the new paint. Pavement surfaces shall be allowed to dry, when water is used for cleaning, prior to striping or marking. Surfaces shall be recleaned, when work has been stopped due to rain.

3.3 APPLICATION

All pavement markings and patterns shall be placed as shown on the plans.

3.3.1 Paint

Paint shall be applied to clean, dry surfaces, and only when air and pavement temperatures are above 40 degrees F and less than 95 degrees F. Paint temperature shall be maintained within these same limits. New asphalt pavement surfaces and new Portland concrete cement shall be allowed to cure for a period of not less than 30 days before applications of paint.

Paint shall be applied pneumatically with approved equipment at rate of coverage specified. The Contractor shall provide guide lines and templates as necessary to control paint application. Special precautions shall be taken in marking numbers, letters, and symbols. Edges of markings shall be sharply outlined.

3.3.1.1 Rate of Application

a. Reflective Markings for Pavement Lines: Pigmented binder shall be applied evenly to the pavement area to be coated at a rate of 105 plus or minus 5 square feet per gallon. Glass spheres shall be applied uniformly to the wet paint on airfield pavement at a rate of 8 plus or minus 0.5 pounds of glass spheres per gallon of paint.

Nonreflective Markings for Warning Boxes: Paint shall be applied evenly to the pavement surface to be coated at a rate of 105 plus or minus 5 square feet per gallon.

3.3.1.2 Drying

The maximum drying time requirements of the paint specifications will be strictly enforced to prevent undue softening of bitumen, and pickup, displacement, or discoloration by tires of traffic. If there is a delay in drying of the markings, painting operations shall be discontinued until cause of the slow drying is determined and corrected.

3.3.2 Reflective Media

Application of reflective media shall immediately follow application of pigmented binder. Drop-on application of glass spheres shall be accomplished to insure that reflective media is evenly distributed at the specified rate of coverage. Should there be malfunction of either paint applicator or reflective media dispenser, operations shall be discontinued immediately until deficiency is corrected.

3.4 MARKING REMOVAL

Pavement marking, shall be removed in the areas shown on the drawings. Removal of marking shall be as complete as possible without damage to the surface. Aggregate shall not be exposed by the removal process. After the markings are removed, the cleaned pavement surfaces shall exhibit adequate texture for remarking as specified in paragraph SURFACE PREPARATION. Contractor shall demonstrate removal of pavement marking in an area designated by the Contracting Officer. The demonstration area will become the standard for the remainder of the work.

3.4.1 Equipment Operation

Equipment shall be controlled and operated to remove markings from the pavement surface, prevent dilution or removal of binder from underlying

pavement, and prevent emission of blue smoke from asphalt or tar surfaces.

3.4.2 Cleanup and Waste Disposal

The worksite shall be kept clean of debris and waste from the removal operations. Cleanup shall immediately follow removal operations in areas subject to air traffic. Debris shall be disposed of at approved sites within 24 hours of generation..

-- End of Section --

SECTION 02921

TOPSOIL AND SEEDING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AGRICULTURAL MARKETING SERVICE (AMS)

AMS-01 (Aug 95) Federal Seed Act Regulations Part 201

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 602 (1995a) Agricultural Liming Materials

ASTM D 4972 (1995a) pH of Soils

ASTM D 5268 (1996) Topsoil Used for Landscaping Purposes

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

AASHTO T 267 (1996) Determination of Organic Content in Soils by Loss on Ignition

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-07 Schedules

Equipment; GA-A.

A listing of equipment to be used for the seeding operation.

SD-08 Statements

Delivery; FIO.

Delivery schedule.

SD-09 Reports

Delivered and Stockpiled Topsoil; GA-A.

Certified reports of inspections and laboratory tests, prepared by an

independent testing agency, including analysis and interpretation of test results. Each report shall be properly identified. Test methods used and compliance with recognized test standards shall be described.

SD-13 Certificates

Seed; GA-A. pH Adjuster; GA-A. Fertilizer; GA-A. Organic Material; GA-A. Mulch; GA-A.

Prior to the delivery of materials, certificates of compliance attesting that materials meet the specified requirements. Certified copies of the material certificates shall include the following:

- a. Seed. Classification, botanical name, common name, percent pure live seed, minimum percent germination and hard seed, maximum percent weed seed content, and date tested.
- b. pH Adjuster. Calcium carbonate equivalent and sieve analysis.
- c. Fertilizer. Chemical analysis and composition percent.
- d. Organic Material: Composition and source.
- e. Mulch: Composition and source.

SD-18 Records

Quantity Check; GA-A.

Bag count or bulk weight measurements of material used compared with area covered to determine the application rate and quantity installed.

Maintenance Record; FIO.

Maintenance work performed, area repaired or reinstalled, diagnosis for unsatisfactory stand of grass plants.

1.3 DELIVERY, INSPECTION, STORAGE, AND HANDLING

1.3.1 Delivery

A delivery schedule shall be provided at least 10 calendar days prior to the first day of delivery.

1.3.1.1 Soil Amendments

Soil amendments shall be delivered to the site in the original, unopened containers bearing the manufacturer's chemical analysis. In lieu of containers, soil amendments may be furnished in bulk. A chemical analysis shall be provided for bulk deliveries.

1.3.2 Inspection

Seed shall be inspected upon arrival at the job site for conformity to species and quality. Seed that is wet, moldy, or bears a test date five months or older, shall be rejected. Other materials shall be inspected for compliance with specified requirements. Open soil amendment containers or wet soil amendments shall be rejected. Unacceptable materials shall be removed from the job site.

1.3.3 Storage

Materials shall be stored in designated areas. Seed, lime, and fertilizer shall be stored in cool, dry locations away from contaminants. Chemical treatment material shall be stored according to manufacturer's instructions and not with seeding operation materials.

1.3.4 Handling

Except for bulk deliveries, materials shall not be dropped or dumped from vehicles.

1.3.5 Time Limitation

Hydroseeding time limitation for holding seed in the slurry shall be a maximum 24 hours.

PART 2 PRODUCTS

2.1 SEED

2.1.1 Seed Classification

State-certified seed of the latest season's crop shall be provided in original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with AMS-01 and applicable state seed laws.

2.1.2 Permanent Seed Species and Mixtures

Permanent seed species and mixtures shall be proportioned by weight as follows:

| Botanical Name | Common Name | Mixture Percent by Weight | Percent Pure Live Seed |
|-------------------------|------------------------|------------------------------|---------------------------|
| Philaris Arundinacea | Reed Canary Grass | 44% | 96% |
| Agrostis Alba | Redtop | 12% | 90% |
| Lolium Multi- Florum | Perrennial Ryegrass | 44% | 98% |

2.1.3 Quality

Weed seed shall be a maximum 1 percent by weight of the total mixture.

2.1.4 Seed Mixing

The mixing of seed may be done by the seed supplier prior to delivery, or on site as directed.

2.1.5 Substitutions

Substitutions will not be allowed without written request and approval from the Contracting Officer.

2.2 TOPSOIL

Material suitable for topsoils shall be obtained from onsite or offsite areas and shall be defined as original surface friable loam topsoil free from gravel and stones retained on a 50 mm sieve, heavy clays, frozen clods, noxious weeds and Johnson grass, having a pH of 6.0 to 7.5 and not less than 3% nor more than 30% organic matter as described by AASHTO T 267. When available, the topsoil shall be the existing surface soil stripped and stockpiled onsite. When additional topsoil is required beyond the available topsoil from the stripping operation, topsoil shall be delivered and amended as recommended by the soil test for the seed specified. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 1-1/2 inch diameter. Topsoil shall be free from viable plants and plant parts.

2.3 SOIL AMENDMENTS

Soil amendments shall meet the following requirements. Vermiculite shall not be used.

2.3.1 pH Adjuster

The pH adjuster shall be an agricultural liming material in accordance with ASTM C 602. These materials may be burnt lime, hydrated lime, ground limestone, sulfur, or shells. The pH adjuster shall be used to create a favorable soil pH for the plant material specified.

2.3.2 Fertilizer

It shall be as recommended by the soil test. Fertilizer shall be controlled release commercial grade, free flowing, uniform in composition, and consist of a nitrogen-phosphorus-potassium ratio. The fertilizer shall be derived from sulphur coated urea, urea formaldehyde, plastic or polymer coated pills, or isobutylenediurea (IBDU). Fertilizer shall be balanced with the inclusion of trace minerals and micro-nutrients.

2.3.3 Organic Material

Organic material shall consist of either bonemeal, rotted manure, decomposed wood derivatives, recycled compost, or worm castings.

2.4 MULCH

Mulch shall be free from weeds, mold, and other deleterious materials. Mulch materials shall be native to the region.

2.4.1 Straw

Straw shall be stalks from oats, wheat, rye, barley, or rice, furnished in air-dry condition and with a consistency for placing with commercial mulch-blowing equipment.

2.4.2 Hay

Hay shall be native hay, sudan-grass hay, broomsedge hay, or other herbaceous mowings, furnished in an air-dry condition suitable for placing

with commercial mulch-blowing equipment.

2.4.3 Wood Cellulose Fiber

Wood cellulose fiber shall not contain any growth or germination-inhibiting factors and shall be dyed an appropriate color to facilitate placement during application. Composition on air-dry weight basis: 9 to 15 percent moisture, pH range from 4.5 to 6.0.

2.4.4 Paper Fiber

Paper fiber mulch shall be recycled news print that is shredded for the purpose of mulching seed.

2.4.5 Hydrophilic Colloids

Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.

2.5 WATER

Water shall be the responsibility of the Contractor, unless otherwise noted. Water shall not contain elements toxic to plant life.

PART 3 EXECUTION

3.1 PLACING TOPSOIL

Where shown on the drawings, topsoil shall be spread evenly the thickness indicated and graded to the elevations and slopes shown. Where the thickness is not specifically indicated on the drawings, the topsoil shall be spread and compacted to a minimum 4-inches. Topsoil shall not be spread when frozen or excessively wet or dry. Material required for topsoil may be obtained from previously scraped onsite areas if the scraped topsoil meets the specification for topsoil, defined in Part 2 PRODUCTS, herein. Compaction shall be performed using a roller weighing not over 120 pounds per foot width of roller or by other approved methods. Topsoil shall not be placed when the subgrade is frozen, excessively wet, extremely dry, or in a condition otherwise detrimental to proper grading. All placed topsoil shall be graded to drain.

3.2 INSTALLING SEED TIME AND CONDITIONS

3.2.1 Seeding Time

Seed shall be installed from 1 March to 31 May for spring establishment; and from 15 August to 1 October for fall establishment.

3.2.2 Seeding Conditions

Seeding operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

When special conditions warrant a variance to the seeding operations, proposed alternate times shall be submitted for approval.

3.2.3 Soil Test

Delivered topsoil and stockpiled topsoil shall be tested in accordance with ASTM D 5268 and ASTM D 4972 for determining the particle size, pH, organic matter content, textural class, chemical analysis, soluble salts analysis, and mechanical analysis. Sample collection on site shall be random over the entire site. Sample collection for stockpiled topsoil shall be at different levels in the stockpile. The soil shall be free from debris, noxious weeds, toxic substances, or other materials harmful to plant growth. The test shall determine the quantities and type of soil amendments required to meet local growing conditions for the seed species specified.

3.3 SITE PREPARATION

3.3.1 Finished Grade and Topsoil

The Contractor shall verify that finished grades are as indicated on drawings, and the placing of topsoil, smooth grading, and compaction requirements have been completed in accordance with Section 02300 EARTHWORK, prior to the commencement of the seeding operation.

3.3.2 Application of Soil Amendments

3.3.2.1 Applying pH Adjuster

The pH adjuster shall be applied as recommended by the soil test. The pH adjuster shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage operation.

3.3.2.2 Applying Fertilizer

The fertilizer shall be applied as recommended by the soil test. Fertilizer shall be incorporated into the soil to a maximum 4 inch depth or may be incorporated as part of the tillage or hydroseeding operation.

3.3.3 Tillage

Soil shall be tilled to a minimum 4 inch depth. Rototillers shall be used where soil conditions and length of slope permit. Drainage patterns shall be maintained as indicated on drawings. Areas compacted by construction operations shall be completely pulverized by tillage. Soil used for repair of surface erosion or grade deficiencies shall conform to topsoil requirements

3.3.4 Prepared Surface

3.3.4.1 Preparation

The prepared surface shall be a maximum 1 inch below the adjoining grade of any surfaced area. New surfaces shall be blended to existing areas. The prepared surface shall be completed with a light raking to remove debris.

3.3.4.2 Field Area Debris

Debris and stones over a minimum 3 inch in any dimension shall be removed from the surface.

3.3.4.3 Protection

Areas with the prepared surface shall be protected from compaction or damage by vehicular or pedestrian traffic and surface erosion.

3.4 INSTALLATION

Prior to installing seed, any previously prepared surface compacted or damaged shall be reworked to meet the requirements of paragraph SITE PREPARATION. Seeding operations shall not take place when the wind velocity will prevent uniform seed distribution.

3.4.1 Installing Seed

Seeding method shall be Broadcast Seeding or Hydroseeding. Seeding procedure shall ensure even coverage. Gravity feed applicators, which drop seed directly from a hopper onto the prepared soil, shall not be used because of the difficulty in achieving even coverage, unless otherwise approved. Absorbent polymer powder shall be mixed with the dry seed at the rate recommended by the manufacturer.

3.4.1.1 Broadcast Seeding

Seed shall be uniformly broadcast at the rate of 4 pounds per 1000 square feet using broadcast seeders. Half the total rate of seed application shall be broadcast in 1 direction, with the remainder of the seed rate broadcast at 90 degrees from the first direction. Seed shall be covered a maximum 1/4 inch depth by disk harrow, steel mat drag, cultipacker, or other approved device.

3.4.1.2 Rolling

The entire area shall be firmed with a roller not exceeding 90 pounds per foot roller width.

3.4.2 Hydroseeding

Seed shall be mixed to ensure broadcast at the rate of 4 pounds per 1000 square feet. Seed and fertilizer shall be added to water and thoroughly mixed to meet the rates specified. The time period for the seed to be held in the slurry shall be a maximum 24 hours. Wood cellulose fiber mulch and tackifier shall be added at the rates recommended by the manufacturer after the seed, fertilizer, and water have been thoroughly mixed to produce a homogeneous slurry. Slurry shall be uniformly applied under pressure over the entire area. The hydroseeded area shall not be rolled.

3.4.3 Mulching

3.4.3.1 Hay or Straw Mulch

Hay or straw mulch shall be spread uniformly at the rate of 2 tons per acre. Mulch shall be spread by hand, blower-type mulch spreader, or other approved method. Mulching shall be started on the windward side of relatively flat areas or on the upper part of steep slopes, and continued uniformly until the area is covered. The mulch shall not be bunched or clumped. Sunlight shall not be completely excluded from penetrating to the ground surface. All areas installed with seed shall be mulched on the same day as the seeding. Mulch shall be anchored immediately following spreading.

3.4.3.2 Mechanical Anchor

Mechanical anchor shall be a V-type-wheel land packer; a scalloped-disk land packer designed to force mulch into the soil surface; or other suitable equipment.

3.4.3.3 Asphalt Adhesive Tackifier

Asphalt adhesive tackifier shall be sprayed at a rate between 10 to 13 gallons per 1000 square feet. Sunlight shall not be completely excluded from penetrating to the ground surface.

3.4.3.4 Non-Asphaltic Tackifier

Hydrophilic colloid shall be applied at the rate recommended by the manufacturer, using hydraulic equipment suitable for thoroughly mixing with water. A uniform mixture shall be applied over the area.

3.4.3.5 Wood Cellulose Fiber, Paper Fiber, and Recycled Paper

Wood cellulose fiber, paper fiber, or recycled paper shall be applied as part of the hydroseeding operation. The mulch shall be mixed and applied in accordance with the manufacturer's recommendations.

3.4.4 Watering Seed

Watering shall be started immediately after completing the seeding of an area. Water shall be applied to supplement rainfall at a rate sufficient to ensure moist soil conditions to a minimum 1 inch depth. Run-off and puddling shall be prevented. Watering trucks shall not be driven over turf areas, unless otherwise directed. Watering of other adjacent areas or plant material shall be prevented.

3.5 QUANTITY CHECK

For materials provided in bags, the empty bags shall be retained for recording the amount used. For materials provided in bulk, the weight certificates shall be retained as a record of the amount used. The amount of material used shall be compared with the total area covered to determine the rate of application used. Differences between the quantity applied and the quantity specified shall be adjusted as directed.

3.6 RESTORATION AND CLEAN UP

3.6.1 Restoration

Existing turf areas, pavements, and facilities that have been damaged from the seeding operation shall be restored to original condition at Contractor's expense.

3.6.2 Clean Up

Excess and waste material shall be removed from the seeded areas and shall be disposed offsite. Adjacent paved areas shall be cleaned.

3.7 SEED ESTABLISHMENT PERIOD

3.7.1 Commencement

The seed establishment period to obtain a healthy stand of grass plants shall begin on the first day of work under this contract and shall end 3 months after the last day of the seeding operation. Written calendar time period shall be furnished for the seed establishment period. The seed establishment period shall be modified for inclement weather, shut down periods, or for separate completion dates of areas.

3.7.2 Satisfactory Stand of Grass Plants

Grass plants shall be evaluated for species and health when the grass plants are a minimum 1 inch high.

3.7.2.1 Field Area

A satisfactory stand of grass plants from the seeding operation for a field area shall be a minimum 10 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

3.7.3 Maintenance During Establishment Period

Maintenance of the seeded areas shall include eradicating weeds, insects and diseases; protecting embankments and ditches from surface erosion; maintaining mulch; protecting installed areas from traffic; mowing; watering; and post-fertilization.

3.7.3.1 Post-Fertilization

The fertilizer shall be applied as recommended by the soil test. A maximum 1/2 pound per 1000 square feet of actual available nitrogen shall be provided to the grass plants. The application shall be timed prior to the advent of winter dormancy and shall be made without burning the installed grass plants.

3.7.3.2 Repair or Reinstall

Unsatisfactory stand of grass plants and mulch shall be repaired or reinstalled, and eroded areas shall be repaired in accordance with paragraph SITE PREPARATION.

3.7.3.3 Maintenance Record

A record of each site visit shall be furnished, describing the maintenance work performed; areas repaired or reinstalled; and diagnosis for unsatisfactory stand of grass plants.

-- End of Section --

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SECTION 02964

COLD MILLING OF BITUMINOUS PAVEMENTS

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Workplan; GA-E.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the cold milling operations.

1.2 EQUIPMENT, TOOLS, AND MACHINES

Equipment, tools, and machines used in the performance of the work shall be maintained in a satisfactory working condition.

1.2.1 Cold-Milling Machine

The cold-milling machine shall be a self-propelled machine capable of milling the pavement to a specified depth and smoothness. Pavement milling machine shall be capable of establishing grade control; shall have means of controlling transverse slope; and shall have effective means of controlling dust produced during the pavement milling operation. The machine shall have the ability to remove the millings or cuttings from the pavement and load them into a truck. The milling machine shall not cause damage to any part of the pavement structure that is not to be removed.

1.2.2 Cleaning Equipment

Cleaning equipment shall be suitable for removing and cleaning loose material from the pavement surface.

1.2.3 Straightedge

The Contractor shall furnish and maintain at the site, in good condition, one 12 foot straightedge or other suitable device for each milling machine, for testing the finished surface. Straightedge shall be made available for Government use. Straightedges shall be constructed of aluminum or other lightweight metal, and shall have blades of box or box-girder cross section with flat bottom reinforced to insure rigidity and accuracy. Straightedges shall have handles to facilitate movement on the

pavement.

1.3 WEATHER LIMITATIONS

Milling shall not be performed when there is accumulation of snow or ice on the pavement surface.

1.4 GRADE AND SURFACE-SMOOTHNESS REQUIREMENTS

1.4.1 Grade

The finished milled surfaces shall conform to the lines, grades, and cross sections indicated. The finished milled-pavement surfaces shall vary not more than 0.04 foot from the established plan grade line and elevation. Finished surfaces at a juncture with other pavements shall coincide with the finished surfaces of the abutting pavements. The deviations from the plan grade line and elevation will not be permitted in areas of pavements where closer conformance with planned grade and elevation is required for the proper functioning of appurtenant structures involved.

1.4.2 Surface Smoothness

Finished surfaces shall not deviate from the testing edge of a straightedge more than 1/4 inch in the transverse or longitudinal direction.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PREPARATION OF SURFACE

The pavement surface shall be cleaned of excessive dirt, clay, or other foreign material immediately prior to milling the pavement.

3.2 MILLING OPERATION

Sufficient passes shall be made so that the designated area is milled to the grades and cross sections indicated. The milling shall proceed with care and in depth increments that will not damage the pavement below the designated finished grade. Items damaged during milling, such as manholes, valve boxes, utility lines, pavement that is torn, cracked, gouged, broken, or undercut, shall be repaired or replaced as directed.

3.2.1 Milling in PCC Pavement Overlay Areas of Taxiway L

Removal of the existing bituminous pavement in the anticipated Portland cement concrete (PCC) overlay areas of Taxiway L, shown on the drawings, shall be performed by cold milling. Milling in the PCC overlay areas shall be performed such that the existing, underlying PCC pavement surface is roughened to a nominal depth of 1/4-inch.

3.3 GRADE AND SURFACE-SMOOTHNESS TESTING

3.3.1 Grade-Conformance Tests

The finished milled surface of the pavement shall be tested for conformance with the plan-grade requirements and will be tested for acceptance by the Contractor by running lines of levels at intervals of 50 feet longitudinally and 50 feet transversely, to determine the elevation of the completed pavement. Grade-conformance testing of milled surfaces is not required in the "Base Stone Removal & Replacement Area" shown on the drawings. The Contractor shall correct variations from the designated grade line and elevation in excess of the plan-grade requirements as directed. Skin patching for correcting low areas will not be permitted. The Contractor shall remove and replace the deficient low area. Sufficient material shall be removed to allow at least 1 inch of asphalt concrete to be placed.

3.3.2 Surface-Smoothness Tests

After completion of the final milling, the finished milled surface will be tested by the Government with a straightedge. Other approved devices may be used, provided that when satisfactorily and properly operated, such devices reveal all surface irregularities exceeding the tolerances specified. Surface irregularities that depart from the testing edge by more than 1/4 inch shall be corrected.

3.4 REMOVAL OF MILLED MATERIAL

Material that is removed shall be disposed of offsite within 24 hours in accordance with the Contractor's approved plan.

-- End of Section --

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SECTION 03300

CONCRETE

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

ACI INTERNATIONAL (ACI)

ACI 318/318R (1999) Building Code Requirements for Reinforced Concrete

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 615/A 615M (1996a) Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

ASTM A 675/A 675M (1990a; R 1995e1) Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties

ASTM C 31/C 31M (1998) Standard practice for making and curing concrete test specimens in the field.

ASTM C 94/C 94M (2000) Ready-Mixed Concrete

ASTM C 172 (1999) Standard practices for mixing freshly mixed concrete.

ASTM C 173 (1996) Standard test method for Air Content of freshly mixed concrete by Volumetric method E1-1995.

ASTM C 231 (1997e1) Standard test method for air content of freshly mixed concrete by pressure method.

1.2 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-08 Statements

Mix Design; GA-A.

Submit a mix design including a statement giving the maximum nominal coarse aggregate size and the proportions of all ingredients that will be used in the manufacture of each strength of concrete, at least 30 days prior to commencing concrete placing operations. Aggregate weights shall be based on the saturated surface dry conditions. Mix design shall also indicate 7

and 28-day compressive strengths. The statement shall be accompanied by test results from an independent commercial testing laboratory, attesting that the proportions selected will produce concrete of the qualities indicated. No substitutions shall be made in the materials used in the work without additional tests to show that the quality of the concrete is satisfactory and the Contracting Officer's approval.

Workplan; GA-A.

The Contractor shall submit a workplan describing the personnel, equipment, and methods to be used in the placement of concrete.

SD-09 Reports

Field Quality Control; GA-A.

Copies of all test reports within 24 hours of completion of the test.

SD-18 Records

Concrete Delivery Tickets; FIO.

Copies of certified delivery tickets for all concrete using in the construction shall be submitted at times of delivery to the site.

1.3 GENERAL REQUIREMENTS

1.3.1 Strength Requirements

Minimum ultimate compressive strengths of concrete (f'c) at 28 days shall be 4,000 psi. Concrete made with high-early strength cement shall have a 7-day strength equal to the specified 28-day strength for concrete made with Type I or II portland cement.

1.3.2 Air Entrainment

All concrete shall contain from 4 to 7 percent total air.

1.3.3 Special Properties

Concrete may contain other admixtures, such as water reducers, superplasticizers, or set retarding agents to provide special properties to the concrete, if approved.

1.3.4 Slump

Slump shall be within 1 to 3 inches.

PART 2 PRODUCTS

2.1 CONCRETE INGREDIENTS

Concrete shall conform to ASTM C 94/C 94M; type optional.

2.2 CURING MATERIALS

Curing materials shall be burlap or impervious sheets.

2.3 DOWELS

Dowels shall conform to ASTM A 675/A 675M, Grade 80.

2.4 FORM MATERIALS

Forms for concrete shall be Sonotubes or other approved materials capable of producing the required shape and surface without adverse effect on the concrete.

2.5 REINFORCEMENT

Bar reinforcement shall be deformed, Grade 60 billet steel conforming to ASTM A 615/A 615M.

2.6 WATER

Water shall be potable.

PART 3 EXECUTION

3.1 PREPARATION OF SURFACES

Surfaces to receive concrete shall be clean and free from frost, ice, mud, and water. Conduit and other similar items shall be in place and clean of any deleterious substance. Surfaces shall be moist but without free water when the concrete is placed.

3.2 FORMWORK

Formwork shall be mortar-tight, properly aligned, and adequately supported to produce concrete conforming accurately to the indicated shapes, lines, dimensions, and with surfaces free of offsets, waviness, or bulges.

3.3 INSTALLATION OF REINFORCEMENT

Reinforcement shall be fabricated to the required shapes and placed in accordance with ACI 318/318R.

3.4 INSTALLATION OF EMBEDDED ITEMS

Embedded items including taxiway light fixtures shall be free from oil, loose scale or rust, and paint. Embedded items shall be installed at the locations indicated and required to serve the intended purpose.

3.5 DOWEL INSTALLATION

Dowels shall be installed at locations indicated and at right angles to joint being doweled. Dowels shall be accurately positioned and aligned parallel to the finished concrete surface before concrete placement. Dowels shall be rigidly supported during concrete placement. One end of dowels shall be coated with a bond breaker.

3.6 BATCHING, MIXING AND TRANSPORTING CONCRETE

The work shall conform to ACI 318/318R part Construction Requirements, except as otherwise specified.

3.7 SAMPLING AND TESTING

3.7.1 Strength Testing

The Contractor shall provide molded concrete specimens for strength tests. Samples of concrete shall be taken from each truck. The samples for strength tests shall be taken in accordance with ASTM C 172. Cylinders for acceptance shall be molded in conformance with ASTM C 31/C 31M by an approved testing laboratory. Each strength test result shall be the average of two test cylinders from the same concrete sample tested at 28 days, unless otherwise specified or approved. Concrete specified on the basis of compressive strength will be considered satisfactory if the averages of all sets of three consecutive strength test results equal or exceed the specified strength, and no individual strength test result falls below the specified strength by more than 500 psi.

3.7.2 Air Content

Air content shall be determined in accordance with ASTM C 173 or ASTM C 231.

ASTM C 231 shall be used with concretes and mortars made with relatively dense natural aggregates. Two tests for air content shall be made on randomly selected batches of each class of concrete placed during each day.

Additional tests shall be made when excessive variation in concrete workability is reported by the placing foreman or the Government inspector. If results are out of tolerance, the placing foreman shall be notified and he shall take appropriate action to have the air content corrected at the plant. Additional tests for air content will be performed on each truckload of material until such time as the air content is within the tolerance specified.

3.7.3 Slump Test

Two slump tests shall be made on randomly selected batches of each class of concrete placed each day. Additional tests will be performed when excessive variation in the workability of the concrete is noted.

3.8 CONCRETE PLACEMENT

Concrete shall be handled from mixer to forms in a continuous manner until the approved unit of operation is completed. Placing will not be permitted when the sun, heat, wind, or limitations of facilities furnished by the Contractor prevent proper consolidation, finishing and curing. Concrete shall be deposited as close as possible to its final position in the forms, and there shall be no vertical drop greater than 8 feet except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it will be effectively consolidated in horizontal layers not more than 12 inches thick.

3.9 CONSOLIDATION

Immediately after placing, each layer of concrete shall be consolidated by internal vibrators, except for slabs 4 inches or less. The vibrators shall at all times be adequate in effectiveness and number to properly consolidate the concrete; a spare vibrator shall be kept at the jobsite during all concrete placing operations. The vibrators shall have a frequency of not less than 8000 vibrations per minute, and the head diameter and amplitude shall be appropriate for the concrete mixture being placed. Vibrators shall be inserted vertically at uniform spacing over the area of placement. The distance between insertions shall be approximately

1-1/2 times the radius of action of the vibrator so that the area being vibrated will overlap the adjacent just-vibrated area by a few inches. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding layer if there is such. Vibrator shall be held stationary until the concrete is consolidated and then withdrawn slowly.

3.10 WEATHER LIMITATIONS

Special protection measures, approved by the Contracting Officer, shall be used if freezing temperatures are anticipated before the expiration of the specified curing period. The temperature of the concrete placed during warm weather shall not exceed 85 degrees F except where an approved retarder is used. The mixing water and/or aggregates shall be cooled, if necessary, to maintain a satisfactory placing temperature. In no case shall the placing temperature exceed 95 degrees F.

3.11 CONSTRUCTION JOINTS

Construction joints shall be located as indicated or approved.

3.12 FINISHING CONCRETE

3.12.1 Formed Surfaces

Fins and loose material shall be removed.

3.12.2 Unformed Surfaces

3.12.2.1 Float Finish

Exposed concrete surfaces around taxiway light fixtures shall be given a float finish. Screeding shall be followed immediately by darbying or bull floating before bleeding water is present, to bring the surface to a true, even plane. After the concrete has stiffened to permit the operation and the water sheen has disappeared, it shall be wood floated.

3.13 CURING AND PROTECTION

3.13.1 General

Immediately after placement, concrete shall be protected from premature drying extremes in temperatures, rapid temperature change, mechanical injury and injury from rain and flowing water. Air and forms in contact with concrete shall be maintained at a temperature above 50 degrees F for the first 3 days and at a temperature above 32 degrees F for the remainder of the specified curing period.

3.13.2 Moist Curing

Concrete to be moist-cured shall be maintained continuously wet for the entire curing period. If water or curing materials used stains or discolors concrete surfaces which are to be permanently exposed, the concrete surfaces shall be cleaned. If the forms are removed before the end of the curing period, curing shall be carried out as on unformed surfaces, using suitable materials. Horizontal surfaces shall be cured by ponding, by covering with a 2 inch minimum thickness of continuously saturated sand, or by covering with waterproof paper, polyethylene sheet, polyethylene-coated burlap or saturated burlap.

-- End of Section --

SECTION 16526

TAXIWAY LIGHTING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI C119.1 (1986; Rev 1997) Sealed Insulated
Underground Connector Systems Rated 600
Volts

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 123 (1997e1) Zinc (Hot-Dip Galvanized)
Coatings on Iron and Steel Products

ASTM A 153 (1998) Zinc Coating (Hot Dip) on Iron and
Steel Hardware

ASTM A 780 (1993a) Repair of Damaged and Uncoated
areas of Hot-Dipped Galvanized Coatings

ASTM B 117 (1997) Operating Salt Spray (Fog) Apparatus

ASTM D 709 (1992; R1997) Laminated Thermosetting
Materials

ASTM D 1654 (1992) Evaluation of Painted or Coated
Specimens Subjected to Corrosive
Environments

FACTORY MUTUAL ENGINEERING AND RESEARCH (FM)

FM P7825a (1998) Approval Guide Fire Protection

FM P7825b (1998) Approval Guide Electrical Equipment

FEDERAL AVIATION ADMINISTRATION (FAA)

FAA AC 150/5345-7 (Rev D; Change 1) L-824 Underground
Electrical Cable for Airport Lighting
Circuits

FAA AC 150/5345-26 (Rev B; Changes 1 & 2) L-823 Plug and
Receptacle, Cable Connectors

FAA AC 150/5345-42 (Rev C; Change 1) Airport Light Bases,
Transformer Houses, Junction Boxes and
Accessories

| | |
|--------------------|---|
| FAA AC 150/5345-46 | (Rev B) Runway and Taxiway Light Fixtures |
| FAA AC 150/5345-47 | (Rev A) Isolation Transformers for Airport Lighting Systems |
| FAA AC 150/5370-10 | (Rev A; Change 1 thru 11) Standards for Specifying Construction of Airports |

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

| | |
|-------------|---|
| IEEE C2 | (1997) National Electrical Safety Code |
| IEEE C62.11 | (1998) IEEE Standard Metal-Oxide Surge Arresters for AC Power Circuits |
| IEEE C62.41 | (1991; R1995) Surge Voltages in Low-Voltage AC Power Circuits |
| IEEE STD 48 | (1998) Standard Test Procedures and Requirements for Alternating-Current Cable Terminations 2.5 kV through 765 kV |

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

| | |
|-----------|---|
| NEMA LA 1 | (1992) Surge Arresters |
| NEMA RN 1 | (1998) Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit |
| NEMA WC 8 | (1991; Rev 3 1996) Ethylene-Propylene-Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy |

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

| | |
|---------|---------------------------------|
| NFPA 70 | (1999) National Electrical Code |
|---------|---------------------------------|

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

| | |
|---------------|---|
| SSPC Paint 20 | (1991) Zinc-Rich Primers (Type I - "Inorganic" and Type II - "Organic") |
|---------------|---|

UNDERWRITERS LABORATORIES (UL)

| | |
|-------------------|---|
| UL Elec Const Dir | (1999) Electrical Construction Equipment Directory |
| UL 1 | (1993; Rev thru Jan 1995) Flexible Metal Conduit |
| UL 6 | (1997) Rigid Metal Conduit |
| UL 44 | (1999) Thermoset-Insulated Wires and Cables |
| UL 360 | (1996; Rev thru Oct 1997) Liquid-Tight Flexible Steel Conduit |

| | |
|---------|---|
| UL 486A | (1997; Rev thru Dec 1998) Wire Connectors and Soldering Lugs for Use with Copper Conductors |
| UL 510 | (1994; Rev thru Apr 1998) Insulating Tape |
| UL 514A | (1996; Rev Jul 1998) Metallic Outlet Boxes |
| UL 651A | (1995; Rev thru Apr 1998) Type EB and A Rigid PVC Conduit and HDPE Conduit |
| UL 854 | (1996; Rev thru Oct 25, 1999) Service-Entrance Cables |
| UL 1242 | (1996; Rev thru Mar 98) Intermediate Metal Conduit |

1.2 GENERAL REQUIREMENTS

Items of the same classification shall be identical including equipment, assemblies, parts, and components.

1.2.1 Code Compliance

The installation shall comply with the requirements and recommendations of NFPA 70 and IEEE C2 and local codes where required.

1.2.2 Standard Product

Material and equipment shall be a standard product of a manufacturer regularly engaged in the manufacture of the product and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.

1.2.3 Prevention of Corrosion

1.2.3.1 Metallic Materials

Metallic materials shall be protected against corrosion as specified. Aluminum shall not be used.

1.2.3.2 Ferrous Metal Hardware

Ferrous metal hardware shall be hot-dip galvanized in accordance with ASTM A 123 and ASTM A 153.

1.2.4 Unusual Service Conditions

Items furnished under this section shall be specifically suitable for the following unusual service conditions:

1.2.4.1 Other

Material or equipment to be installed underground shall be suitable for submerged operation.

1.2.5 Verification of Dimensions

The Contractor shall become familiar with details of the work, verify dimensions in the field, and advise the Contracting Officer of any discrepancy before performing any work.

1.3 SYSTEM DESCRIPTION

The lighting shall consist of taxiway lights and the lighting power supply and control.

1.4 SUBMITTALS

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Data

Materials and Equipment; GA-E.

A complete itemized listing of equipment and materials proposed for incorporation into the work. Each itemization shall include an item number, the quantity of items proposed, and the name of the manufacturer. Data composed of catalog cuts, brochures, circulars, specifications and product data, and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents.

Special Tools; GA-E.

List of special tools and test equipment required for maintenance and testing of the products supplied by the Contractor.

Parts List; GA-E.

A list of parts and components for the system by manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair necessary to ensure continued operation with minimal delays.

SD-06 Instructions

Repair Requirements; GA-E.

Instructions necessary to check out, troubleshoot, repair, and replace components of the systems, including integrated electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting after acceptance of the system shall be provided.

Posted Instructions; GA-E.

A typed copy of the proposed posted instructions showing wiring, control diagrams, complete layout and operating instructions explaining preventive maintenance procedures, methods of checking the system for normal safe operation, and procedures for safely starting and stopping the system. Proposed diagrams, instructions, and other sheets shall be submitted prior to posting.

SD-09 Reports

Test Results; GA-E.

Upon completion and testing of the installed system, performance test reports are required in booklet form showing all field tests performed to adjust each component and all field tests performed to provide compliance with the specified performance criteria. Each test shall indicate the final position of controls.

Field test reports shall be written, signed and provided as each circuit or installation item is completed. Field tests shall include resistance-to-ground and resistance between conductors, and continuity measurements for each circuit. For each series circuit the input voltage and output current of the constant current regulator at each intensity shall be measured. For multiple circuits the input and output voltage of the transformer for each intensity setting shall be measured. A visual inspection of the lights operation, or of the markings appearance, or of the installation of fixtures or units installed shall be reported.

SD-13 Certificates

Qualifications; GA-E.

Certifications, when specified or required, including Certification of the Qualifications of Medium-Voltage Cable Installers, Certified Factory and Field Test Reports, and Certificates of Compliance submitted in lieu of other proofs of compliance with these contract provisions. A certification that contains the names and the qualifications of persons recommended to perform the splicing and termination of medium-voltage cables approved for installation under this contract shall be included. The certification shall indicate that any person recommended to perform actual splicing and termination has been adequately trained in the proper techniques and has had at least 3 recent years of experience in splicing and terminating the same or similar types of cables approved for installation. Any person recommended by the Contractor may be required to perform a dummy or practice splice and termination, in the presence of the Contracting Officer, before being approved as a qualified installer of medium-voltage cables. If that additional requirement is imposed, the Contractor shall provide short sections of the approved types of cables with the approved type of splice and termination kits, and detailed manufacturer's instruction for the proper splicing and termination of the approved cable types. The certification shall be prepared in conformance with paragraph CERTIFICATES OF COMPLIANCE in the SPECIAL CONTRACT REQUIREMENTS, and shall be accompanied by satisfactory proof of the training and experience of persons recommended by the Contractor as cable installers.

Materials and Equipment; GA-E.

When equipment or materials are specified to conform to the standards or publications and requirements of AASHTO, ANSI, ASTM, AEIC, FM, IEEE, IES, NEMA, NFPA, or UL, or to an FAA, FS, or MS, proof that the items furnished under this section of the specifications conform to the specified requirements shall be included. The label or listing in UL Elec Const Dir or in FM P7825a, FM P7825b or the manufacturer's certification or published catalog specification data statement that the items comply with applicable specifications, standards, or publications and with the manufacturer's standards will be acceptable evidence of such compliance. Certificates shall be prepared by the manufacturer when the manufacturer's published data or drawings do not indicate conformance with other requirements of these specifications.

SD-19 Operation and Maintenance Manuals

Equipment; GA-E.

Six copies of operation and six copies of maintenance manuals for the equipment furnished. One complete set shall be furnished prior to performance testing and the remainder shall be furnished upon acceptance. Operating manuals shall detail the step-by-step procedures required for system startup, operation, and shutdown. Operating manuals shall include the manufacturer's name, model number, parts list, and brief description of all equipment and their basic operating features. Maintenance manuals shall list routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guides. Maintenance manuals shall include conduit and equipment layout and simplified wiring and control diagrams of the system as installed.

PART 2 PRODUCTS

2.1 MATERIALS

Equipment and materials shall be new unless indicated or specified otherwise. Materials and equipment shall be labelled when approved by Underwriters Laboratories (UL) or Factory Mutual (FM) System. Askarel and insulating liquids containing polychlorinated biphenyls (PCB's) will not be allowed in any equipment. Equipment installed below grade in vaults, manholes, and handholes shall be the submersible type.

2.1.1 Electrical Tape

Electrical tape shall be UL 510 plastic insulating tape.

2.1.2 Nameplates

Each major component of equipment shall have as a minimum the manufacturer's name, address, and catalog or style number on a nameplate securely attached to the item of equipment. Laminated plastic nameplates shall be provided for equipment, controls, and devices to identify function, and where applicable, position. Nameplates shall be 1/8 inch thick laminated cellulose paper base phenolic resin plastic conforming to ASTM D 709 sheet type, grade ES-3, white with black center core. Surface shall be a matte finish with square corners. Lettering shall be engraved into the black core. Size of nameplates shall be 1 by 2-1/2 inches minimum with minimum 1/4 inch high normal block lettering. Nameplates provided as indicated. Nameplates shall be fastened to the device with a minimum of two sheet metal screws or two rivets.

2.1.3 Conduit, Conduit Fittings, and Boxes

2.1.3.1 Rigid Steel or Intermediate Metal Conduit (IMC) and Fittings

The metal conduit and fittings shall be UL 6 and UL 1242, respectively, coated with a polyvinylchloride (PVC) sheath bonded to the galvanized exterior surface, nominal thick, conforming to NEMA RN 1.

2.1.3.2 Flexible Metal Conduit

Flexible metal conduit shall be UL 1, zinc-coated steel. UL 360 liquid-tight flexible metal conduit shall be used in wet locations.

2.1.3.3 Outlet Boxes for Use with Steel Conduit, Rigid or Flexible

These outlet boxes shall be UL 514A, cast metal with gasket closures.

2.1.3.4 Plastic Duct for Concrete Encased Burial

These ducts shall be PVC schedule 40 conforming to UL 651A.

2.1.4 Wire and Cable

Conductors shall be copper except as otherwise indicated.

2.1.4.1 Conductor Sizes

Conductor size shall conform to American Wire Gage (AWG). Conductor sizes larger than No. 8 AWG shall be stranded. No. 8 AWG and smaller may be solid or stranded unless otherwise indicated.

2.1.4.2 Low Voltage Wire and Cable

UL 854, Type USE, 600 volts shall be used for underground low voltage power cables. UL 44, Type XHHW shall be used for secondary series lighting circuits

2.1.4.3 Power Cables for Use in Taxiway Lighting

Power cables shall be rated 5 kV, 133 percent insulation level, with shield and jacket conforming to NEMA WC 8 for ethylene-propylene rubber insulated cables.

2.1.4.4 Wire and Cable for Airfield Lighting Systems

- a. Taxiway lighting cable shall be FAA AC 150/5345-7, Type L-824 for Ethylene-Propylene-Rubber Type B 5000-volt cable. Series airfield lighting cable shall be unshielded.
- b. Counterpoise Wire. No.4 AWG bare stranded copper, annealed or soft drawn.
- c. Fused Cable Connectors. Connector shall consist of a line-side receptacle and a load-side plug, each in a molded rubber form and including crimp-on fittings for the cable ends to accommodate a 250-volt cartridge-type fuse with fuse rating as indicated. Connectors in kit form shall be properly sized for the specific cable diameter involved. Completed connection shall be watertight.

2.1.4.5 Cable Tags

Cable tags for each cable or wire shall be installed at duct entrances entering or leaving manholes, handholes, and at each terminal within the lighting vault. Cable tags shall be stainless steel, bronze, lead strap, or copper strip, approximately 1/16 inch thick or hard plastic 1/8 inch thick suitable for immersion in salt water and impervious to petroleum products and shall be of sufficient length for imprinting the legend on one line using raised letters. Cable tags shall be permanently marked or stamped with letters not less than 1/4 inch in height as indicated. Two-color laminated plastic is acceptable. Plastic tags shall be dark colored with markings of light color to provide contrast so that

identification can be easily read. Fastening material shall be of a type that will not deteriorate when exposed to water with a high saline content and to petroleum products.

2.1.1.5 Ground Rods

Ground rods shall be sectional copper-clad steel with diameter adequate to permit driving to full length of the rod, but not less than 3/4 inch in diameter and not more than 10 feet long, unless indicated otherwise.

2.1.1.6 Lightning Arresters

These lightning arresters shall be in accordance with IEEE C62.11 and IEEE C62.41 as applicable with ratings as indicated.

2.1.1.7 Surge Protection

Surge protection shall be metal oxide varistors (MOV) in accordance with NEMA LA 1 for power and signal circuits with ratings as recommended by the system manufacturer.

2.1.1.8 Cable Connectors and Splices

Cable connectors in accordance with FAA AC 150/5345-26, Item L-823 shall be used for connections and splices appropriate for the type of cable. Other types of cable connectors and splices shall be of copper alloys for copper conductors, aluminum alloys for aluminum-composition conductors and a type designed to minimize galvanic corrosion for copper to aluminum-composition conductors. For FAA Type L-824 lighting cable, connectors shall be FAA AC 150/5345-26, Type L-823.

2.1.1.9 Transformers

2.1.1.9.1 Encapsulated Isolation Transformers

These transformers shall be FAA AC 150/5345-47, Type L-830. Each transformer shall be provided with rating as shown on the contract drawings. Transformers to be non-PCB oil cooled, air cooled units are not acceptable.

2.1.1.10 Light Bases

Light bases shall be FAA AC 150/5345-42 Type L-868. Steel bases, Class 1, Size B 24" deep shall be provided as indicated or as required to accommodate the fixture or device installed thereon if diameter is not shown.

2.1.1.10.1 Accessories

Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures. Bolts shall be stainless steel.

2.1.1.11 Sealant for Fixtures and Wires in Drilled Holes or Saw Kerfs

The sealant shall be in accordance with FAA AC 150/5370-10, Type P-606. Use FAA AC 150/5370-10, Type P-606 sealant for use in asphaltic concrete (AC) or Portland cement concrete (PCC) pavement compatible with AC pavement and having a minimum elongation of 50 percent. Formulations of Type P-606 which are compatible with PCC pavement only are prohibited.

2.1.12 Lamps and Filters

Lamps shall be (1) 45 watt halogen for each lighting fixture required under this contract. Lamp life shall be 1000 hours minimum. Filters shall be of colors as indicated and conforming to the specification for the light concerned or to the standard referenced. Quartz lamps are unacceptable.

2.1.13 Lighting Fixtures

The lighting fixtures for the taxiway lighting shall be as shown on the contract drawings and as specified herein. The light fixture shall meet FAA AC 150/5345-46 (Rev. B) for Style 3 Series Lighting. The fixture shall also meet or exceed ICAO Annex 14, Volume 1 standards and recommendations and the definitions of Aerodrome Design Manual Part 4. The fixture shall be load bearing, shall not project more than 1/4 inch above grade and shall have no negative slope light channels to cause trapping of dirt, sand or water. The light window design shall avoid direct exposure to roll-over with maximum seated perch to protect against mechanical impact. The fixture shall be equipped with a strain relief cable having a molded plug, FAA L-823, sealed at the bottom with a compression gland. The glass lens shall be temperature and shock resistant borosilicate.

2.2 TAXIWAY LIGHTING SYSTEMS

Taxiway lighting systems shall include centerline lights and hold position lights. These systems shall also include the associated equipment, power supplies and controls, mounting devices, and interconnecting wiring to provide complete systems as specified.

2.2.1 Taxiway Edge Lights

Taxiway edge lights shall be fully flush fixtures using filters to provide aviation green light. These edge light fixtures shall meet the requirements of FAA AC 150/5345-46, Type L-852A on straight sections and Type L-852B on curved sections.

2.2.2 Hold Position Lights

The hold positions shall be marked by painted lines and lights as specified or indicated on the contract drawings. The lights shall meet the requirements of FAA AC 150/5345-46, Type L-852A, fully flush, unidirectional, with aviation yellow filter toward the taxiway approach to the runway.

2.3 FACTORY COATINGS

Equipment and component items, including but not limited to transformer stations and ferrous metal luminaries not hot-dip galvanized or porcelain enamel finish shall be provided with corrosion-resistant finishes which shall withstand 500 hours of exposure to the salt spray test specified in ASTM B 117 without loss of paint or release of adhesion of the paint primer coat to the metal surface in excess of 1/16 inch from the test mark. The scribed test mark and test evaluation shall be in accordance with ASTM D 1654 with a rating of not less than 7 in accordance with TABLE 1, (Procedure A). Cut edges or otherwise damaged surfaces of hot-dip galvanized sheet steel or mill galvanized sheet steel shall be coated with zinc rich paint conforming to SSPC Paint 20 in accordance with ASTM A 780.

PART 3 EXECUTION

3.1 GENERAL INSTALLATION REQUIREMENTS

Except as covered herein, excavation, trenching, and backfilling shall conform to the requirements of Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR TAXIWAY LIGHTING SYSTEM. Concrete work shall conform to the requirements of Section 03300 CONCRETE.

3.2 CABLES, GENERAL REQUIREMENTS

The type of installation, size and number of cables shall be as indicated. Conductors larger than No. 8 AWG shall be stranded. Loads shall be divided as evenly as practicable on the various phases of the system. Manufacturer's written recommendations shall be furnished for each type of splice and medium-voltage cable joint and termination, and for fireproofing application methods, and shall be approved before any work is done. Medium-voltage cable joints and terminations shall be the standard product of a manufacturer and shall be either of the factory preformed type or of the kit type containing tapes and other required parts. Medium-voltage cable joints shall be made by qualified cable splicers. Compounds and tapes shall be electrical grade suitable for the cable insulation provided and shall use design materials and techniques recommended by the manufacturer. Maximum length of cable pull and cable pulling tensions shall not exceed the cable manufacturer's recommendations.

3.2.1 Duct Line Installation

Cables shall be installed in duct lines where indicated. Cable splices in low-voltage cables shall be made in manholes and handholes only, except as otherwise noted. Cable joints in medium-voltage cables shall be made in manholes only. Neutral and ground conductors shall be installed in the same duct with their associated phase conductors. Counterpoise cable shall be installed in a separate duct or direct-burial not less than 6 inches above the uppermost duct containing electrical cable. Electrical metallic tubing shall not be installed underground or enclosed in concrete.

3.3 MEDIUM-VOLTAGE CABLES

Medium-voltage cables shall be suitable for a rated circuit voltage of 5 kV.

Other parts of the cable system such as joints and terminations shall have ratings not less than the rating of the cables on which they are installed.

Separable insulated connectors shall have nominal voltage ratings coordinated to associated apparatus ratings rather than cable ratings when used to connect cable to apparatus. Cables shall be provided with 133 percent insulation level. Neutral conductors shall be of the same insulation material as phase conductors.

3.3.1 Cable Joints

3.3.1.1 Types

Separable insulated connectors of suitable construction or standard splice kits shall be used for single-conductor and two-conductor cables. The connectors shall be of FAA AC 150/5345-26 type.

3.3.1.2 Requirements

Cable joints shall provide insulation and jacket equivalent to that of the associated cable.

3.3.2 Terminations

Terminations shall be IEEE STD 48, Class 1 or Class 2, of the molded elastomer, wet-process porcelain, prestretched elastomer, heat-shrinkable elastomer, or taped type. Acceptable elastomers are track-resistant silicone rubber or track-resistant ethylene propylene compounds, such as ethylene propylene rubber or ethylene propylene diene monomer. Separable insulated connectors may be used for apparatus terminations, when such apparatus is provided with suitable bushings. Terminations shall be of the outdoor type. Class 3 terminations are not acceptable. Terminations, where required, shall be provided with mounting brackets suitable for the intended installation.

3.3.2.1 Factory Preformed Type

Molded elastomer, wet-process porcelain, prestretched, and heat-shrinkable terminations shall utilize factory preformed components to the maximum extent practicable rather than tape build-up. Terminations shall have basic impulse levels as required for the system voltage level. Leakage distances shall pass the wet withstand voltage test required by IEEE STD 48 for the next higher BIL level.

3.4 LOW-VOLTAGE CABLES

Cable shall be rated 600 volts, except that secondaries of isolation transformer to in-pavement lights installed in pavement saw kerf and 48 volt DC control cables may be 300 volts. Other parts of cable systems such as splices and terminations shall be rated at not less than 600 volts. Splices in wires No. 10 AWG and smaller shall be made with an insulated, solderless, pressure type connector, conforming to the applicable requirements of UL 486A. Splices in wires No. 8 AWG single conductor cable shall be made with FAA AC 150/5345-26 Type L-823 connectors. Splices below grade or in wet locations shall be sealed type conforming to ANSI C119.1 or shall be waterproofed by a sealant-filled, thick wall, heat shrinkable, thermosetting tubing or by pouring a thermosetting resin into a mold that surrounds the joined conductors.

3.5 DUCT LINES

Duct lines shall be concrete-encased, thick-wall type.

3.5.1 Requirements

Numbers and sizes of ducts shall be as indicated. Duct lines shall be laid with a minimum slope of 4 inches per 100 feet. Depending on the contour of the finished grade, the high point may be at a terminal, a manhole, a handhold, or between manholes or handholes. Manufactured 90 degree duct bends may be used only for equipment risers, unless specifically indicated as acceptable. The minimum manufactured bend radius shall be 18 inches for ducts of less than 3 inches diameter, and 36 inches for ducts 3 inches or greater in diameter. Otherwise, long sweep bends having a minimum radius of 25 feet shall be used for a change of direction of more than 5 degrees, either horizontally or vertically. Both curved and straight sections may be used to form long sweep bends as required, but the maximum curve shall be 30 degrees and manufactured bends shall be used. Ducts shall be provided with end bells when duct lines terminate in manholes or handholes.

3.5.2 Treatment

A standard flexible mandrel shall be used for cleaning followed by a brush with stiff bristles. Mandrels shall be at least 12 inches long and shall have diameters 1/4 inch less than the inside diameter of the duct being cleaned. Pneumatic rodding may be used to draw in lead wires. A coupling recommended by the duct manufacturer shall be used when an existing duct is connected to a duct of different material or shape. Ducts shall be stored to avoid warping and deterioration with ends sufficiently plugged to prevent entry of water or solid substances. Ducts shall be thoroughly cleaned before being laid. Plastic ducts shall be stored on a flat surface and protected from the direct rays of the sun.

3.6 CABLE MARKERS

Cable markers or tags shall be provided for each cable at duct entrances entering or leaving manholes or handholes and at each termination within the lighting vault. Cables in each manhole or handhole shall have not less than two tags per cable, one near each duct entrance hole. Immediately after cable installation, tags shall be permanently attached to cables and wires so that they cannot be accidentally detached.

3.7 SEMIFLUSH TAXIWAY LIGHTS

Water, debris, and other foreign substances shall be removed prior to installing fully flush light base and light. Positioning jigs shall be used to hold the light bases and/or lights to ensure correct orientation and leveling until the concrete, adhesive, or sealant can provide permanent support.

3.8 SPLICES FOR TAXIWAY LIGHTING CABLE

3.8.1 Connectors

Kit type connectors shall be used to splice 5 kV single-conductor series lighting cables. During installation and prior to covering with earth, mating surfaces of connectors shall be covered until connected and clean when plugged together. At joint where connectors come together, heat shrinkable tubing shall be installed with waterproof sealant with two half-lapped layers of tape over the entire joint. Joint shall prevent entrapment of air which might subsequently loosen the joint.

3.9 GROUNDING SYSTEMS

3.9.1 Counterpoise Installation

Counterpoise wire shall be laid for entire length of circuits supplying taxiway lighting. Wire shall be in one piece, except where distance exceeds the length usually supplied. Counterpoise shall be installed on top of the envelope of concrete-encased ducts shown on the drawing. Where trenches or duct lines intersect, counterpoise wires shall be electrically interconnected by exothermic welding or brazing. Counterpoise to earth ground shall be connected at every 2,000 feet of cable run, at lighting vault, and at feeder connection to light circuit by means of ground rods as specified.

3.9.2 Fixture Grounding

Each fixture or group of adjacent fixtures shall be grounded by a grounding circuit separate from the counterpoise system unless required otherwise or

by driven ground rods if permitted. Fixtures, steel light bases or grounding bushings on steel conduits shall be connected to an independent ground rod by a No. 6 AWG bare stranded copper wire. Semiflush fixtures for direct mounting in pavement need not be grounded. Copper wire shall be connected to ground rods by exothermic weld or brazing.

3.10 ISOLATION TRANSFORMERS

Transformer lead connections shall conform to FAA AC 150/5345-26. Transformer secondary connectors shall plug directly into a mating connector on the transformer secondary leads. During installation, mating surfaces of connectors shall be covered until connected and clean when plugged together. At joint where connectors come together, heat shrinkable tubing shall be installed with waterproof sealant or with two half-lapped layers of tape over the entire joint. Joint shall prevent entrapment of air which might subsequently loosen the joint.

3.11 TAXIWAY LIGHTING SYSTEMS

3.11.1 Taxiway Centerline and Holding Lights

These lights may be mounted on light bases as indicated on contract drawings. A transformer shall be provided for each light and installed in the light base as indicated on the contract drawings. Each light shall be provided with lamp failure shorting device to allow the other lights to operate if one lamp fails. Lights shall be connected to secondary circuit wires at fixture leads using preinsulated watertight connector sleeves crimped with a tool that requires a complete crimp before tool can be removed. Connection shall be at staggered locations and wrapped with one layer of half-lapped plastic electrical insulating tape.

3.12 FIELD QUALITY CONTROL

The Contracting Officer shall be notified five working days prior to each test. Deficiencies found shall be corrected and tests repeated.

3.12.1 Operating Test

Each completed circuit installation shall be tested for operation. Equipment shall be demonstrated to operate in accordance with the requirements of this Section. One day and one night test shall be conducted for the Contracting Officer.

3.12.2 Distribution Conductors, 600-Volt Class

Test shall verify that no short circuits or accidental grounds exist using an instrument which applies a voltage of approximately 500 volts providing a direct reading in resistance.

3.12.3 Counterpoise System Test and Inspection

Continuity of counterpoise system shall be visually inspected at accessible locations. Continuity of counterpoise system to the vault grounding system shall be tested in manhole closest to the vault.

3.12.4 Progress Testing for Series Lighting Circuits

A megger test shall be conducted on each section of circuit or progressive combinations of sections as they are installed. Each section or

progressive combination of sections shall be tested with a megohmmeter providing a voltage of approximately 1000 volts, a direct reading in resistance. Results shall be documented. Faults indicated by these tests shall be eliminated before proceeding with the circuit installation.

3.12.5 Electrical Acceptance Tests

Acceptance tests shall be performed for series and multiple taxiway lighting circuits only on complete lighting circuits. Each series and multiple lighting circuit shall receive a high voltage insulation test.

3.12.5.1 Low-Voltage Continuity Tests

Each series circuit shall be tested for electrical continuity. Faults indicated by this test shall be eliminated before proceeding with the high-voltage insulation resistance test.

3.12.5.2 High-Voltage Insulation Resistance Tests

Each series lighting circuit shall be subjected to a high-voltage insulation resistance test by measurement of the insulation leakage current with a suitable high-voltage test instrument which has a steady, filtered direct current output voltage and limited current. High-voltage tester shall include an accurate voltmeter and microammeter for reading voltage applied to the circuit and resultant insulation leakage current. Voltages shall not exceed test values specified below.

- a. Test Procedure: Both leads shall be disconnected from regulator output terminals and support so that air gaps of several inches exist between bare conductors and ground. Cable sheaths shall be cleaned and dried for a distance of 1 foot from ends of cables and exposed insulation at ends of cables. Ends of both conductors of the circuit shall be connected together and to high-voltage terminals of test equipment, and test voltage applied as specified in the following tabulation between conductors and ground for a period of 5 minutes.

| Series | Test Voltage, dc | |
|---|----------------------------------|---------------------------------|
| | First Test on New Circuits | Test on Existing Circuits |
| Lighting Circuits | | |
| High Intensity Series Lighting Circuits (5,000 volt leads, 500 and 200 watt transformers) | 9000 | 5000 |
| Medium Intensity Series Lighting Circuits (5,000 volt leads, 30/45 watt transformers) | 6000 | 3000 |
| 600-Volt Circuits | 1800 | 600 |

When additions are made to existing circuits, only new sections shall be tested in accordance with "First Test on New Circuits" in table above. To

ensure reliable operation, complete circuit shall be tested at reduced voltages indicated above.

- b. Leakage Current: Insulation leakage current shall be measured and recorded for each circuit after a 1 minute application of the test voltage. If leakage current exceeds values specified below, the circuit shall be sectionalized and retested and the defective parts shall be repaired or replaced. Leakage current limits include allowances for the normal number of connectors and splices for each circuit as follows:

- (1) Three microamperes for each 1000 feet of cable.
- (2) Two microamperes for each 200 watt and each 500 watt 5,000-volt series transformer.
- (3) Two microamperes for each 30/45-Watt 5,000 volt series transformer.

If measured value of insulation leakage current exceeds calculated value, the circuit shall be sectionalized and tested as specified for each section. Defective components shall be repaired or replaced until repeated tests indicate an acceptable value of leakage current for the entire circuit.

3.12.6 Constant Current Regulators

The existing constant current regulator shall be examined to ensure that porcelain bushings are not cracked, internal and external connections are correct, switches and relays operate freely and are not tied or blocked, fuses, if required, are correct, and liquid level of liquid-filled regulators is correct. Relay panel covers shall be removed only for this examination; it is not necessary to open the main tank of liquid-filled regulators. The instructions on the plates attached to the regulators shall be followed. Covers shall be replaced tightly after completing examinations and tests.

3.12.7 Regulator Electrical Tests

Supply voltage and input tap shall correspond. With the loads disconnected, regulator shall be energized and the open circuit protector observed to ensure that it de-energizes the regulator within 3 seconds. After testing circuits for open circuit and ground fault and corrections, if any, and after determining that lamps are serviceable and in place, the loads shall be connected for each circuit or combination of circuits to be energized by the regulator and the voltage and current measured simultaneously for each brightness tap. Voltmeter and ammeter shall have an accuracy of plus or minus 1 percent of meter full scale. Readings shall be recorded during the day and night in order to obtain the average supply voltage. Output current on each brightness tap shall be within plus or minus 2 percent full scale of the nameplate values after making necessary correction in the supply voltage. Late model regulators have automatic supply voltage correction in lieu of input taps, and output current does not change as supply voltage varies. When output current on highest intensity setting deviates from nameplate value by more than 2 percent of meter full scale and the regulator is not overloaded, internal adjustment shall be checked as described on regulator instruction plate. Since adjustment may be rather delicate, a deviation of up to plus or minus 5 percent of meter full scale is allowed for lower intensity settings before

attempting to readjust the regulator.

3.12.8 Final Operating Tests

After completion of installations and the above tests, circuits, control equipment, and lights covered by the contract shall be demonstrated to be in acceptable operating condition. Each switch in the control tower lighting panels shall be operated so that each switch position is engaged at least twice. During this process, lights and associated equipment shall be observed to determine that each switch properly controls the corresponding circuit. Telephone or radio communication shall be provided between the operator and the observer. Tests shall be repeated from the alternate control station, from the remote control points, and again from the local control switches on the regulators. Each lighting circuit shall be tested by operating the lamps at maximum brightness for not less than 30 minutes. At the beginning and at the end of this test the correct number of lights shall be observed to be burning at full brightness. One day and one night operating test shall be conducted for the Contracting Officer.

-- End of Section --